LOUDEN

DAIRY BARN EQUIPMENT
HORSE STABLE FITTINGS
BARN PLANS

◆

LOUDEN MACHINERY CO. OF CANADA
LIMITED
GUELPH ONTARIO

The EDITH *and* LORNE PIERCE
COLLECTION *of* CANADIANA

Queen's University at Kingston

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LOUDEN STEEL STALLS STANCHIONS and PENS

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SC/CP John Mappin June 1983

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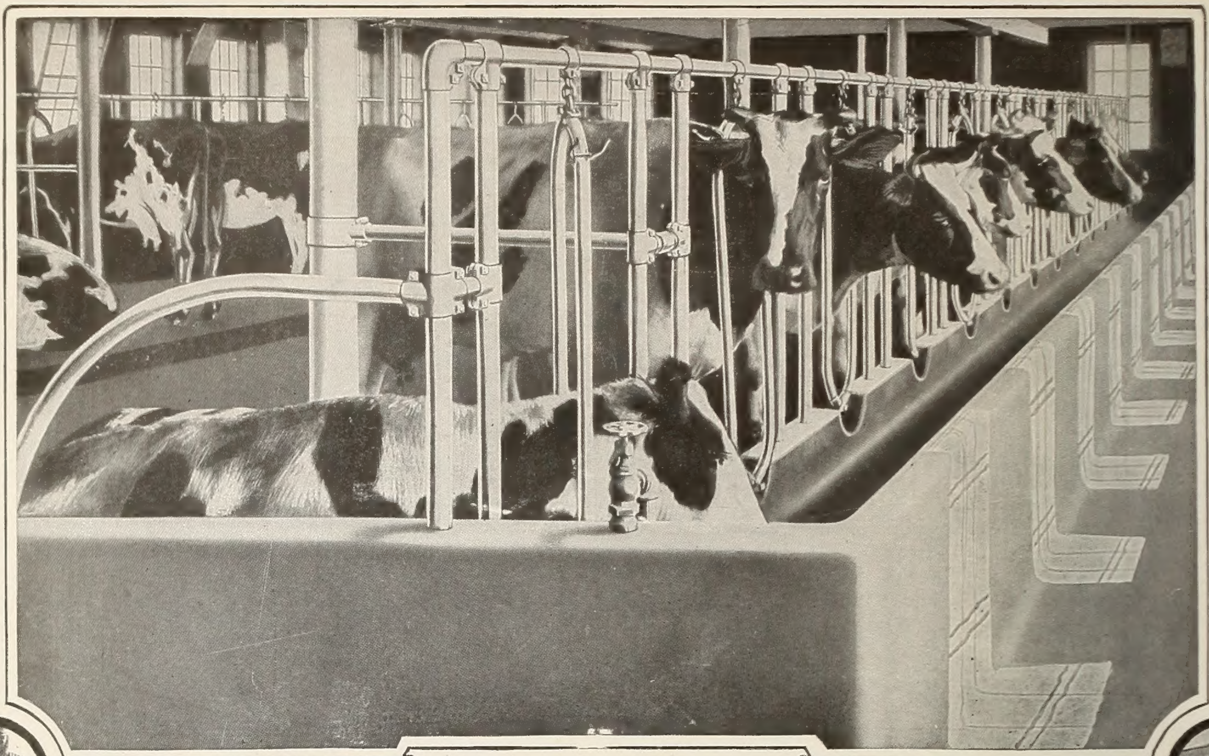
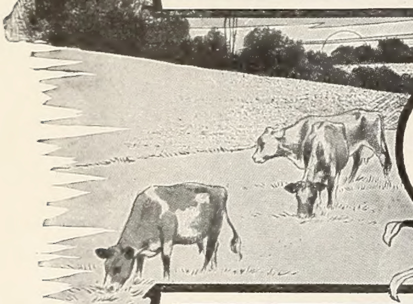
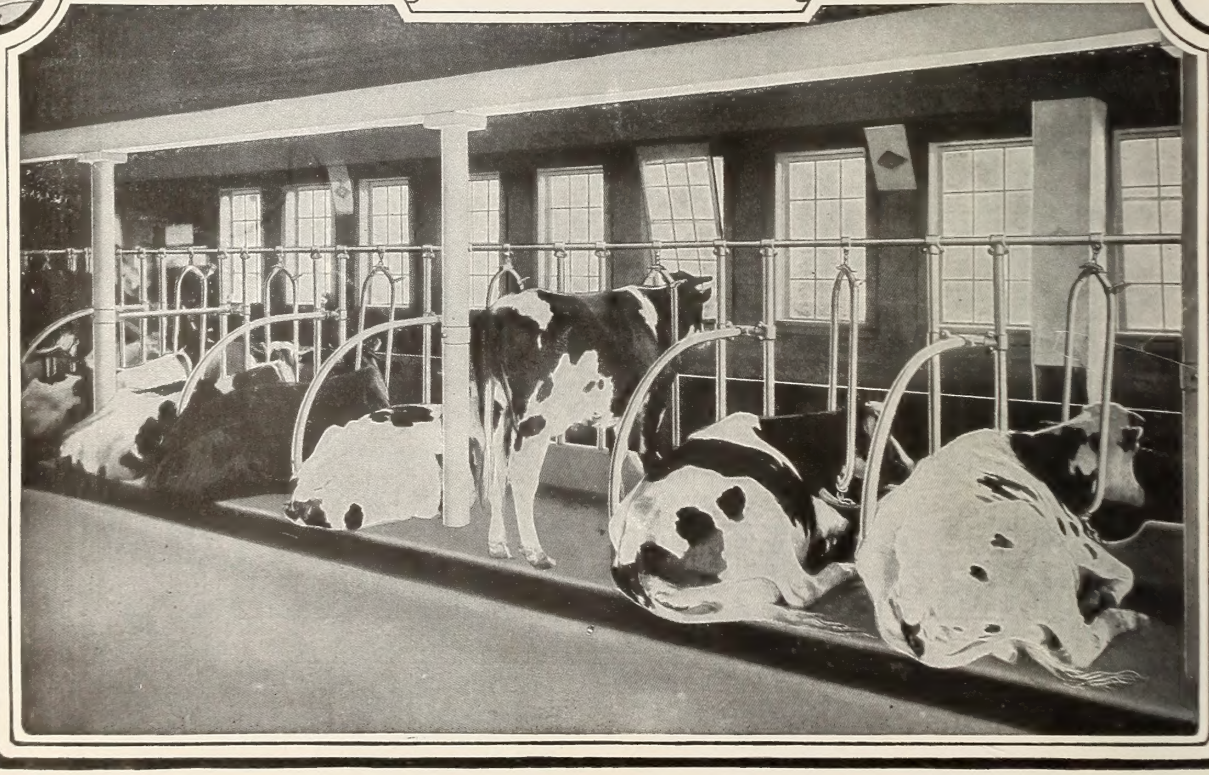


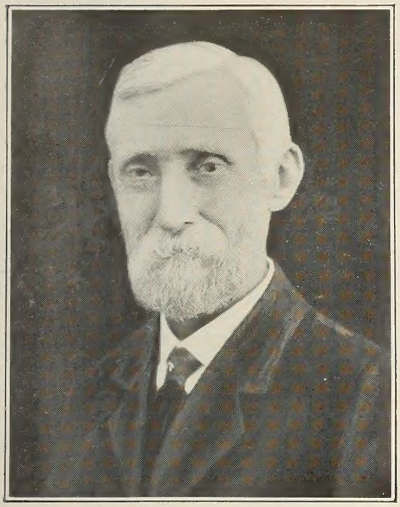


A sample
of what may be seen in
hundreds of Canadian stables
fitted with Louden's Stalls and Stanchions. How free, happy and
contented these cattle
look.



The Equipment of Dairy Barns

By William Louden

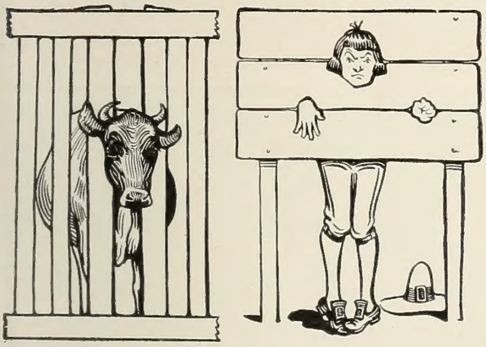


The growth of the dairy industry in this country during the last few years has been unprecedented. This growth marks an epoch in our history—the passing of the period of exploitation and the beginning of the policy of conservation. In all new countries, with cheap land and a virgin soil, dairying is more or less neglected, but as the price of land advances and its fertility decreases, dairying has to be taken up to save the soil and make farming profitable.

As the dairy business increases, better facilities are needed to keep pace with its development and to meet its requirements. This is particularly true of Dairy Barn Equipments. Milk production is the foundation of the dairy business, and anything that will add to milk production or make it more economical or profitable is important and should receive the most careful consideration.

It is well known that the cow is a sensitive animal, and that she will respond readily and liberally to comfortable surroundings and to kind treatment. She has the power of withholding her milk, and will divert her energies from its production to the protection of herself against uncomfortable or unsanitary conditions. This fact is known by all who have given attention to the subject. In numerous instances milk production has been increased from 30 to 40 per cent by making the cow more comfortable and giving her more sanitary surroundings.

This fact is further attested by the great increase and growing popularity of modern dairy barn equipments. The old style wooden stalls and stanchions, which were little better than ancient inquisition stocks, with their flagrantly insanitary features added to that of positive cruelty—seriously curtailing milk production, as well as injuring the cows and making the work harder—have been condemned, and are being rapidly discarded. It makes no difference how large or how small the herd, whether it consists of two or a hundred cows—whether the owner is an exclusive dairyman or a general farmer—he cannot afford to use this old style, out-of-date equipment.



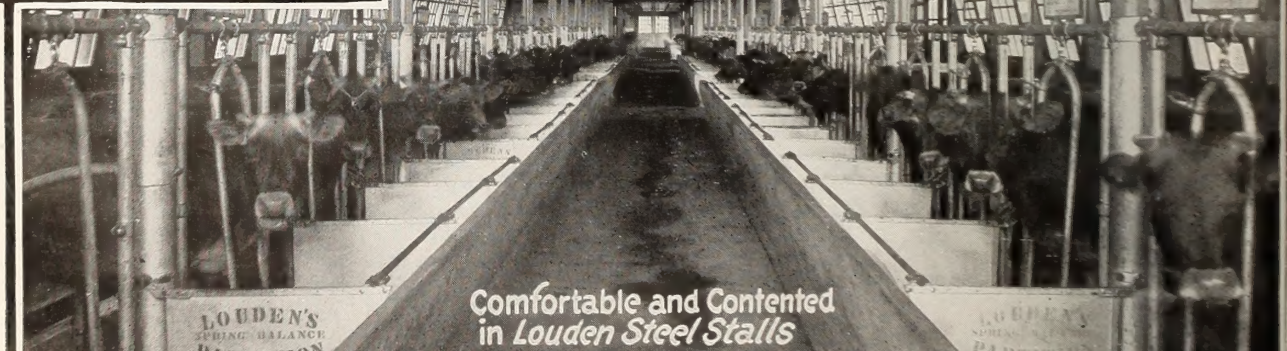
Equally Comfortable

In making the change from the old to the new, or in selecting a new equipment for the first time, the question arises as to **the kind of equipment to use,** and the purchaser is sometimes puzzled in making a choice. One of the objects of this catalog is to assist in making a wise selection. Of course, the primary object is to point out the superior qualities of the Louden goods, but, in addition to this we desire to furnish the information necessary to enable the purchaser to get what will best suit his needs.

Above everything else we desire **satisfied customers**—customers who will not only be satisfied for the time being while the novelty of the thing is fresh, but who will **continue to be satisfied** as the years go by—the customers who will always be glad **to speak a good word.** These are the kind of customers required to build up and maintain a permanent business.

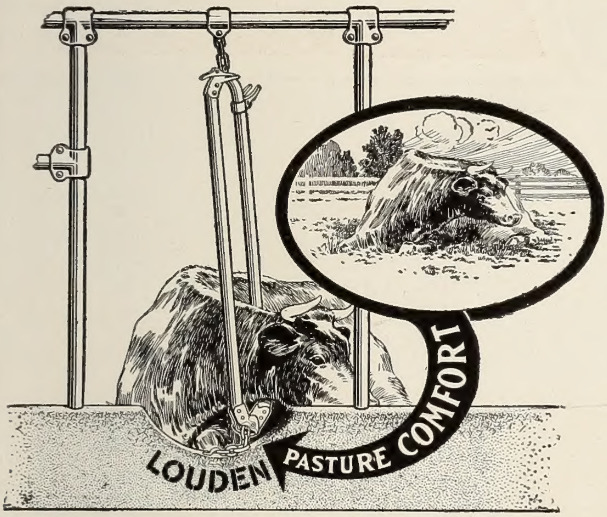
Cramped and Miserable in Rigid Wood "Stocks"

Give Your Cows
the Comfort and Freedom of
Louden Swinging Steel Stanchions
and
Watch the Milk Yield Jump!



Comfortable and Contented in *Louden Steel Stalls*

We **know** our Dairy Barn Equipment **is superior** to anything else and we want **you,** as a prospective customer, to know it. Therefore, we wish to give you the fullest opportunity possible for a thorough investigation. If you have used our goods it would be unnecessary to say a word except to show you the improvements we have made since our last catalog was issued. We are **sure** that **eventually** you will use our equipments as many others are now doing who first tried something else. A dairyman having four barns, three of which are fitted with our equipments and the other one with an equipment of another make, being asked why he did not use the Louden Equipment in the other barn, replied, "This was the first barn we built and we profited on our other barns by our mistakes on this one." It is wise to profit by the mistakes of others.



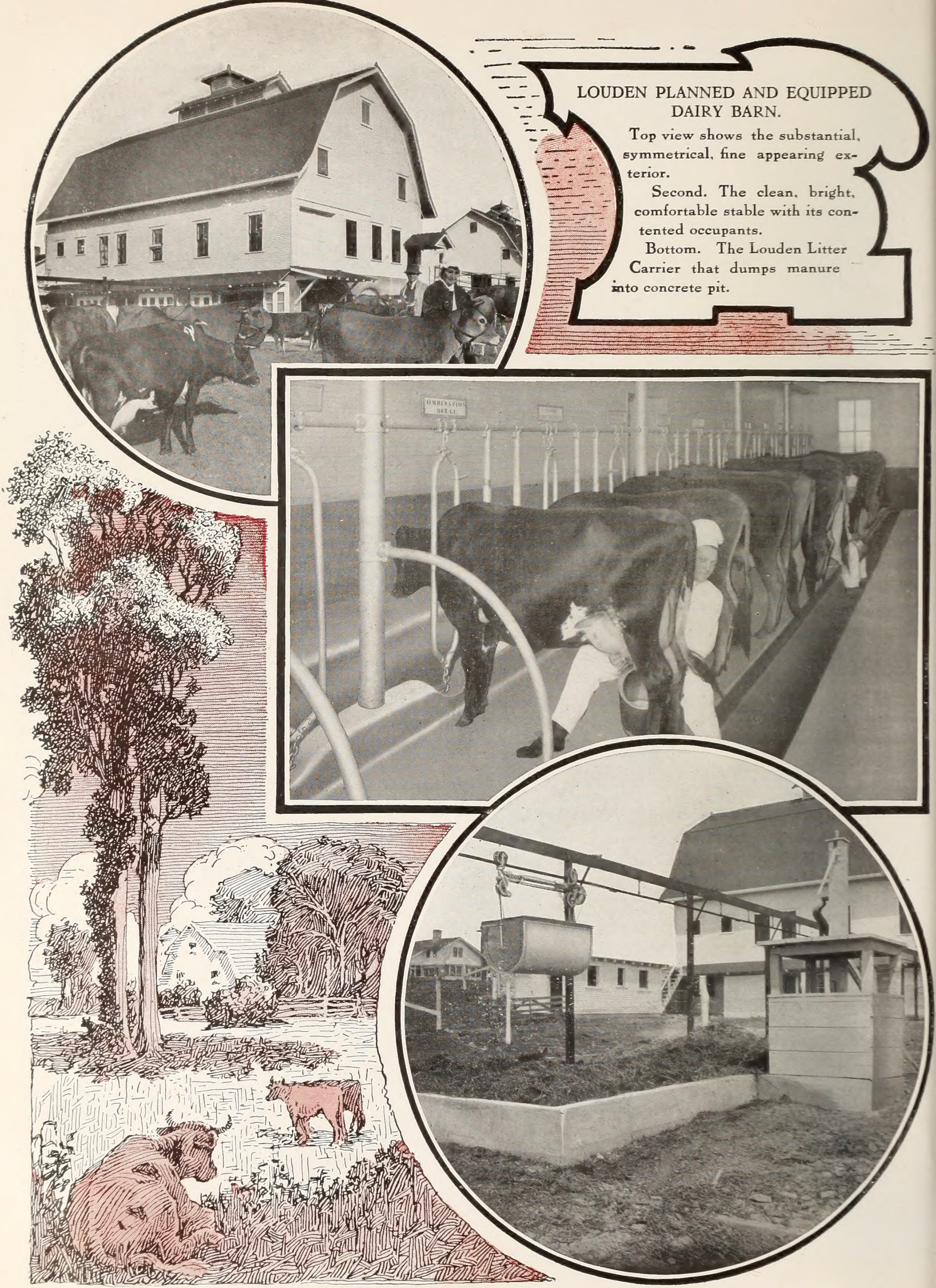
Two of the prime essentials in a dairy barn equipment are **cleanliness and comfort for the cow.** The cow should be made as comfortable in her stall as she is in the pasture. In short, "Pasture Comfort" is the condition to be sought for. While being securely held in place in the stall, she should be absolutely free to lie down to one side or the other, and to turn her head, or to lick her sides, without cramping her neck in the least, or straining herself in any way. A cow rarely lies down squarely in the middle of the stall, but nearly always at one side or the other. Therefore, the stanchion should always be anchored to the curb by a **single slack chain** that will permit its lower end **to swing in a circle of 8 to 10 inches.** No other arrangement will fill the bill.

A cow in getting up and lying down always pitches forward. Consequently the stanchion must be free to swing forward and back or she will be sure to jam her shoulders against it. When held by a stanchion too rigidly anchored the cow will sometimes make several attempts to rise before she succeeds and will jam her shoulders with each attempt. This condition should not exist. The lower end of a swiveled or swinging stanchion **should always be sloping or well rounded,** and **never anywhere near square or flat;** otherwise the cow will be liable to get her foot caught between the manger curb and the lower square end of the stanchion and have it severely injured. This cannot happen when the stanchion has sloping ends.

Cleanliness is equally as important as the comfort of the cow. "Sanitary" is the word generally used. Everything nowadays is "Sanitary," even "Sanitary" garbage cans. The word "Sanitary" being so badly overworked, we prefer to use the word "Cleanliness" which is said to be next to Godliness. The way to keep a dairy barn "Sanitary" is to make it so it will be **easy to clean** and **easy to keep clean.** It will not and **it cannot clean itself.** There should be no cracks or crevices anywhere to catch and hold dirt. Neither should there be any recesses or pockets in which dirt can collect, nor bars or pipes under which it can gather and be difficult to remove.

Especially is it necessary that the manger and the manger curb over which the cow has to eat should be constructed to afford **no refuge whatever for dirt.** Any attachments placed on the curb are liable to become "**dirt catchers.**" In getting **a** new equipment be sure to avoid everything which may become **a "dirt catcher."**

Plainness, smoothness and simplicity are the things to strive for and not the addition of **attachments which are frequently mere "talking points" having** no



LOUDEN PLANNED AND EQUIPPED DAIRY BARN.

Top view shows the substantial, symmetrical, fine appearing exterior.

Second. The clean, bright, comfortable stable with its contented occupants.

Bottom. The Louden Litter Carrier that dumps manure into concrete pit.

real value. In this way only can you have stalls and mangers which will be truly "Sanitary."

We have always made it a point to cut out attachments wherever possible and to make our stalls and stanchions, and pens and other equipments as plain and smooth as possible, and to have no sharp corners which might injure the animal. Also, to properly proportion the parts so attachments will not be needed. An examination of this catalog will show how well we have succeeded.

We have had the longest and largest experience in designing and manufacturing barn and stable equipments, our business being established over fifty years ago. We do not, however, rely on past achievements. We realize that the **world moves** and that an article which was good enough in the past may not be good enough for the present. We are always striving to make our goods better, and each year we spend thousands of dollars in improvements.

Our long experience teaches that every change is not an improvement. There are many illusions and delusions in this world. Sometimes the most "taking things"—things which for awhile will furnish the greatest selling points, do not **make good** when put to the test of time. We strive to avoid all such things no matter how alluring they may be, and spare neither time nor expense **to make sure** that our improvements are **genuine** and not merely fads or fancies which will soon pass away.

In conducting an extensive business, and with thousand of people to deal with, we find that there is apparently no end to the different ideas, and sometimes we have to make things just to please the purchaser. In so doing, our aim is to make the very best article of the kind that can be made and to always give **value received.** We do not wish to dictate or even seem to dictate, but we will always be frank in recommending what we think is best.

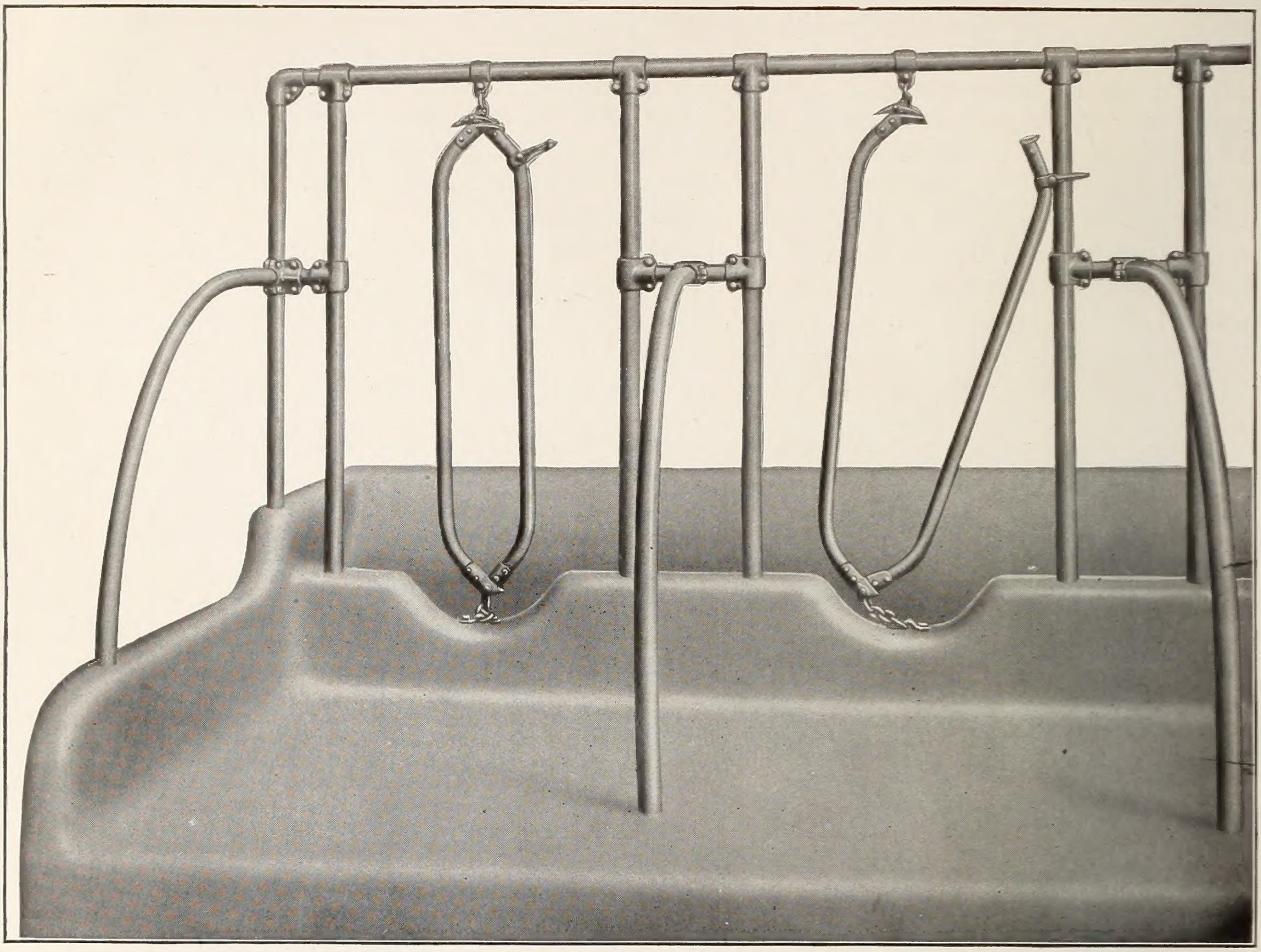
During the last few years we have given much time and study to the **standardization** of our goods. Our **Standardized Mangers** for cow stalls and our improved methods of constructing them are the greatest improvements made in dairy barn equipments during the last decade. Agricultural Colleges throughout this and other countries have adopted our Directions for the instruction of their classes in the proper method of making mangers for cow stalls.

Perhaps some who read this catalog and look at the elegant equipments shown will think they are "only for the rich." This is a mistaken idea. Louden Equipments are made for persons of moderate means as well as for those who have greater wealth and are **within the reach of every farmer.** Standardization enables us to produce better goods at less cost and we are always glad to give our customers their full share of the benefits resulting therefrom.

We do **not say,** nor wish to intimate, that if any one buys our equipment, he will "get rich quick" or immediately become a millionaire. Such claims would not interest sensible people. We **do say** that our equipment is, not only **the best that is made,** but that it will return **a good profit on the investment** whether the purchaser is rich or only in moderate circumstances.

We are particular to use the best material in the manufacture of our goods, and to have everything strong and durable. We have a thoroughly equipped, up-to-date factory and ample facilities to properly handle the business. We have our own galvanizing plant and malleable iron foundry and this catalog will show that we have the largest and most complete line of Dairy Barn Equipments in the world.

We have Branch Houses in several leading cities. Our goods are also carried in stock in various parts of the country. In every way we strive to give not only the very best goods which can be made, but also the very best possible service. Upon this basis we solicit your patronage.



The Louden Cross Braced Double Post Cow Stall—Fig. 812

Patented, May 20, 1913

If we were to cease the manufacture of all other cow stalls and confine ourselves to a single pattern, it would be our **Cross Braced Double Post Stall, Fig. 812.** It is not only the best, but is also the most popular stall manufactured. The following are some of its most prominent features:

Perfectly Proportioned. The stall posts are so spaced that there is a good separation between the feed in the manger and the bedding on the stall floor, while, with our flexibly hung stanchions, there is ample room between the posts for the comfort of the cow. The posts are set the proper distance apart to let the stanchion open wide enough to receive the cow's head, and yet not so wide that the cow can walk right through it. This is one of the faults of single post stalls. It is entirely overcome in our 812 stall.

No Attachments Needed. With single post stalls the cow is liable to place her head in the space between the post and stanchion and to prevent this, attachments of different kinds are used to at least, partially remedy the defect. Nothing of the kind is needed with our 812 Stalls. While the posts are set wide enough apart to give the cow ample freedom to lie down at one side or the other, and to turn her head or lick her side without cramping, the space is not so wide that the cow is liable to get her head in the wrong place. There is just **one place** where the cow can put her head and that is in the **open stanchion,** and it will never be so wide open that she will be tempted to force her body through it.

Simplicity of Construction. There are no complicated parts about this stall to get out of order and cause trouble. In addition to the stanchion, it consists of the **continuous top-rail,** the vertical stall posts, the **cross brace,** and the bent stall partition with the necessary couplings to hold the parts together. The cross braces are made of different lengths to suit different widths of stalls, whereby the **proper proportions are always preserved.**

Louden Cross Braced Double Post Cow Stall—Fig. 812

Specifications of Standard Size

Size of Tubing. The stall posts, stall partition, top-rail and cross brace are all made of the best quality of $1\frac{9}{10}$ O. D. steel tubing—smooth and exceedingly strong. No second-hand pipe or tubing is used in the construction of our stalls.

Width. The standard width of the stall is 3 feet 6 inches (42 in.) but this may be varied to suit requirements and the top-rail will be cut to suit.

Height. The total height above the stall floor is 5 feet, 3 inches (63 in.). The standard height of the manger curb at the sides is 11 inches and at the bottom of the cut-out where stanchion is anchored is 6 inches. Distance from stanchion anchor to the underside of top-rail, 4 feet 7 inches (55 in.).

Length of Posts. The stall posts are 5 feet 5 inches (65 in.) long and with the standard High Built-Up Curb they go 15 inches into the cement. The lower ends of posts and partitions are indented to insure a better hold.

Stall Partitions. The cut shows our No. 3 Single Bend Partition which we recommend and which we furnish unless otherwise specified. The lower end of the partition goes 5 inches in the cement. It stands 3 feet 6 inches (42 in.) above the stall floor at the inner end and the same distance out from center of curb at the bottom. Our No. 2 or No. 5 Partition, described on another page, will be substituted if preferred.

Stanchions. The cut shows our Tubular Steel Stanchions, Fig. 861, which we recommend and furnish with stalls unless otherwise specified. If preferred, we will furnish our Five-in-One or Quick Adjustable Stanchion at an advance in price.

Finish. All the parts are finished with our Special Dairy Barn Paint, or will be galvanized if ordered.

Illustration. The cut shows two stalls and one end section on the cross alley where the end curbs are located. When there is an alley at each end of a row of stalls, an extra end section is required for which an extra charge will be made.

812 Stall Complete includes: 2 Stall Posts; 1 Stall Partition; 42 inches of top-rail (more or less); 1 Cross Brace, 10 inches long (more or less); 5 Interlocking Dust-Proof Couplings; 1 Tubular Stanchion; 1 Stanchion Holder; 1 Guide or "Hold-Open" for Stanchion, and 1 Standard Stanchion Anchor.

End Section Complete includes: 2 Stall Posts; 1 Stall Partition; 1 Cross Brace, 5 inches long (more or less); no top-rail; 2 Interlocking Dust-Proof Couplings; 1 Right Angle Corner Coupling, and 1 Single Piece Elbow.

Weights. The Standard 812 Stall complete with Tubular Stanchion and 42 inches of top-rail weighs 70 lbs. The Standard End Section, complete, no top-rail, weighs 45 lbs.

Note: Stalls wider or narrower than 42 inches and requiring longer or shorter top-rails will weigh a pound or two more or less. The Wood-Lined, Five-in-One or Quick Adjustable Stanchion will also add a little to the weight.

Note: When one end of a row of stalls is joined to a wall the end section at the other end will be counted as a part of the stalls, but if a wall flange or a partition next the wall is used, or a post is set between the stanchion and the wall or is extended up to the ceiling, an extra charge will be made for these parts.

Louden Machinery Co.,
of Canada, Ltd.

Gentlemen:

Three years ago I purchased twenty of your steel stalls and stanchions, and have them installed in my barn. Since then I have found them to give perfect satisfaction in every way. They are just as good as the day they were put up, and I feel quite confident they will last a life time. I can heartily recommend them to any one installing stanchions and stalls. I also put in one of your litter carriers, using 280 ft. of track, and found it to be a great labor-saving device. I consider the stanchions, stalls and litter carrier to be ahead of any others I have ever seen.

Yours truly,
Frank Hull,
Kerwood, Ontario.

The Couplings, a transparent view of which is shown by Fig. 933, are interlocking and practically dust-proof, two bolts only being required to hold the parts together. The upper ends of the couplings on the top-rail, where dust is most likely to settle, are **perfectly smooth;** also the side ends on the stall posts are smooth where the cows are likely to rub. No other couplings begin to compare with these. They are the strongest and most durable, and are the easiest to clean and keep clean.

The Manger Construction. The cut shows one of our **Standardized Mangers** with **High Built-Up Curb** (standard height 11 inches) with a cut-out where the stanchion is anchored, so it will only be the standard height at this point. By this means the cow cannot nose her feed out on the stall floor and at the same time there will be plenty of throat space for her to lie with her head low down in the manger, or to turn her head to the side in the stall. The cut also shows our latest design of High Built-Up End Curbs for the manger and the stall floor, to prevent the feed and the bedding from getting out into the alley. These curbs and mangers with their corners so completely rounded, and all so smooth and perfectly molded, are positively the **"last word"** in manger construction.

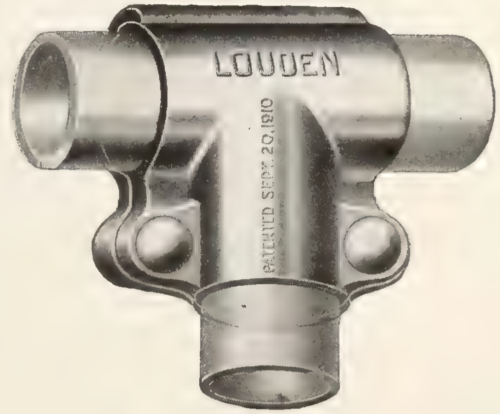
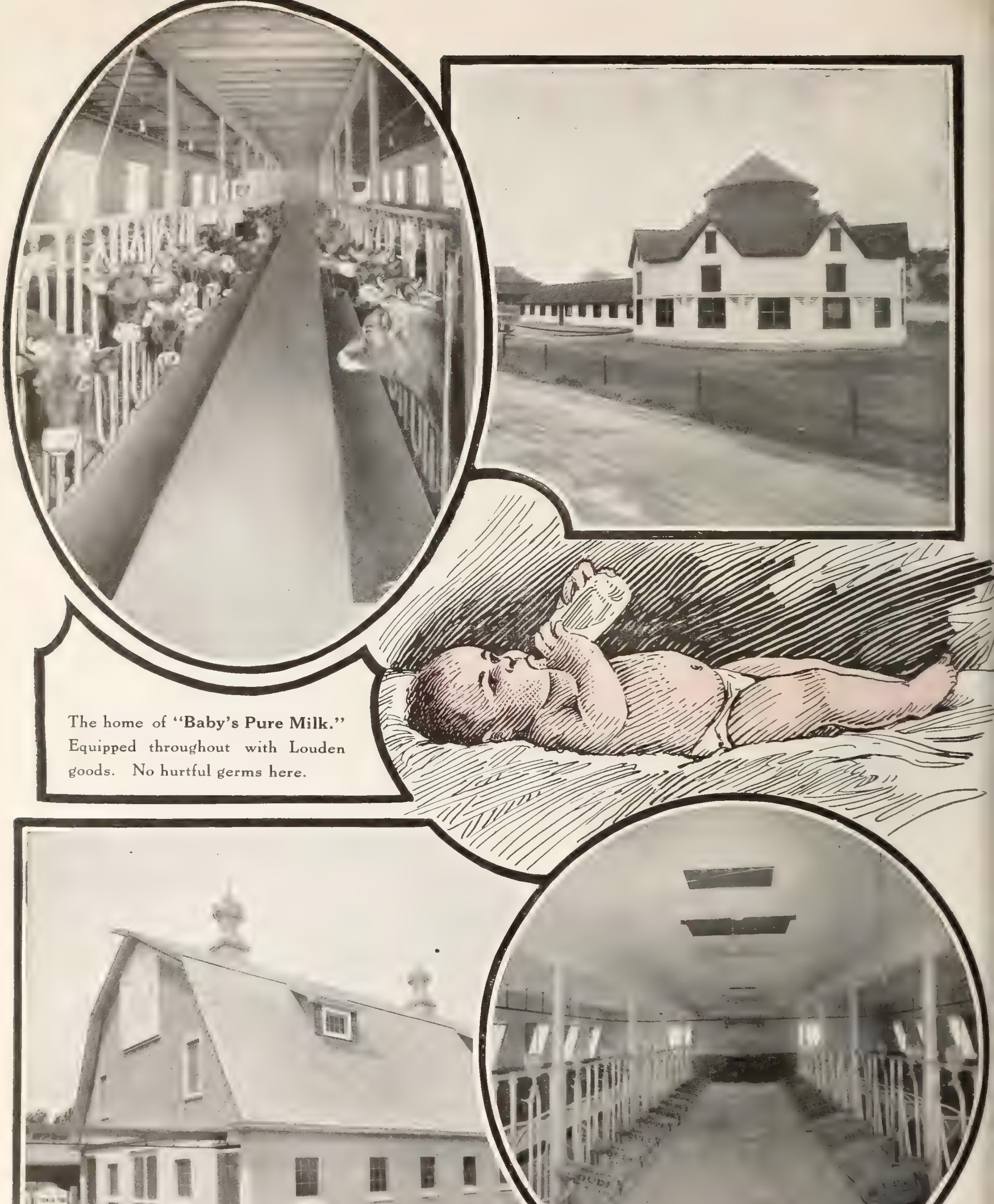
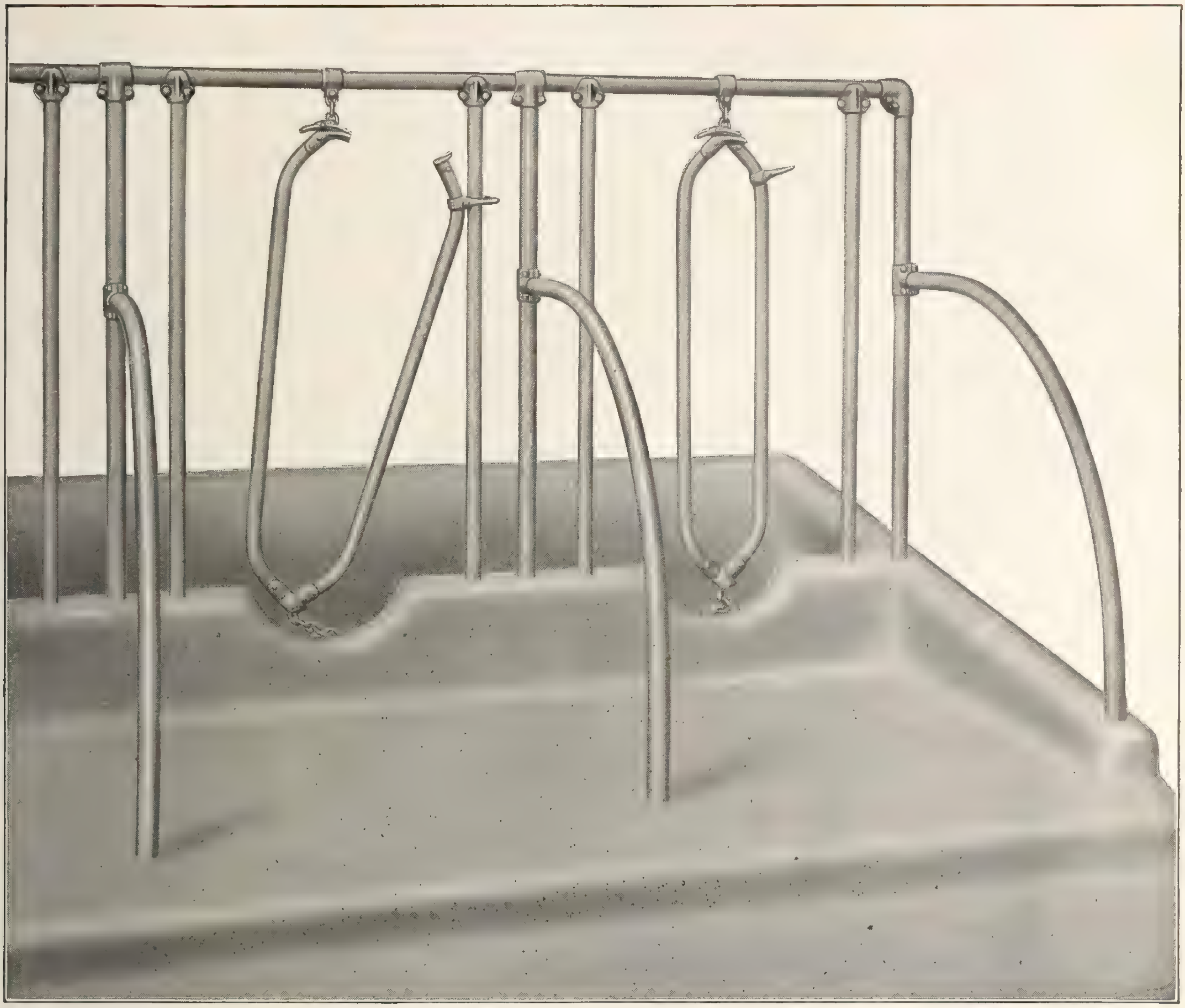


Fig. 933. **Patented Jan. 24, 1911; Jan. 8, 1917.**



The home of "**Baby's Pure Milk.**" Equipped throughout with Louden goods. No hurtful germs here.



Louden Triple Post Cow Stall—Fig. 810

This is a good, substantial stall. It is well proportioned, and has most of the special Louden features, such as simplicity and smoothness of construction and the Interlocking Dust-Proof Couplings. The side posts can be set wider or narrower as may be required for wider or narrower stalls, thus **preserving the proper proportions** between the posts so the cow will not be liable to put her head in the space between the stanchion and the post.

Also, what is of even greater importance—the stanchion will not open so wide that the cow can walk right through it. Such being the case, no extra attachments will be required to cure defects. There is a good separation between the feed in the manger and the bedding on the stall floor. The manger construction shown in the cut is up-to-date in every respect, the corners all being completely rounded to prevent injury to the cow, and to avoid **"Dirt Catchers"** which are the bane of many dairy barns.

It has the Louden **High Built-Up Curb** at the sides of the stanchions, and also the end curb to prevent the feed and bedding from getting out into the alley. The cut shows the end curb is sloped from the top of the manger to within a few inches of the stall floor at the gutter, but if preferred, it may be made level from the top of the manger to the stall post and then level from the manger curb as shown by Fig. 812.

This stall is specially adapted to use with columns or large posts, as shown by Fig. 934. The stall partitions are connected directly to the columns by our large post couplings, see N-14 and N-15, Plate 15. When a large post or column is used and the stalls are narrow the side posts are generally dispensed with.

Louden Triple Post Cow Stall—Fig. 810

Specifications of Standard Size

Sizes of Tubing. We use 1⅝ O. D. steel tubing for the center posts, stall partitions and top-rail. The side posts are $1\frac{5}{16}$ O. D. tubing.

Note: The width and the height of 810 Stalls, and the lengths of the posts, are the same as the 812 Stalls. See Specifications on Page 77. The stall partitions, the stanchions, and the finish are also the same.

Illustration. The cut shows two stalls and one end section on the cross alley where the end curbs are located. When there is an alley at each end of a row of stalls, an extra end section is required for which an extra charge will be made.

810 Stall Complete consists of 1 Center Stall Post; 2 Side Posts, 42 inches of Top Rail (more or less); 1 Stall Partition; 2 Interlocking Dust-Proof Couplings; 2 Grip Clamps for side posts (See N-19, Plate 15, page 136); 1 Tubular or Wood-Lined Stanchion; 1 Regular Stanchion Holder; 1 Guide or "Hold-Open" for Stanchion, and 1 Regular Stanchion Anchor.

810 End Section, consists of 1 Main Stall Post; 1 Partition; no top-rail; 1 Interlocking Dust-Proof Coupling; 1 Grip Clamp, and 1 Single Piece Elbow.

Weight. The Standard 810 Stall complete with Tubular Steel Stanchion and 42 inches of top-rail weighs 72½ lbs. The Standard 810 End Section, no top-rail, weighs 37 lbs.

Note: Stalls wider or narrower than 42 inches and requiring longer or shorter top-rails will weigh a pound or two more or less. The Wood-Lined, Five-in-One or Quick Adjustable Stanchion will also add a little to the weight.

Note: When one end of a row of stalls is joined to a wall the end section at the other end will be counted as a part of the stalls, but if a wall flange or a partition next the wall is used, or a post is set between the stanchion and the wall or is extended up to the ceiling, an extra charge will be made for these parts.

River Falls, Wis., Dec. 20, 1915
Louden Machinery Company
Fairfield, Iowa
Gentlemen:

I now have my fixtures installed complete and am very proud of the result. They lighten the work and make it a pleasure. My barn now presents an excellent example of what can be done with a somewhat old and not overly well-planned barn by a judicious use of modern fixtures. Should you ever care to direct visitors to view this transformation, I bid them hearty welcome. I am now a Louden Booster.

Thanking you most heartily for your courteous and considerate treatment, I am
D. E. Flower,
Flowercrest Herd.

Louden High Built-Up Curb and the Low Level Curb—Fig. 1187

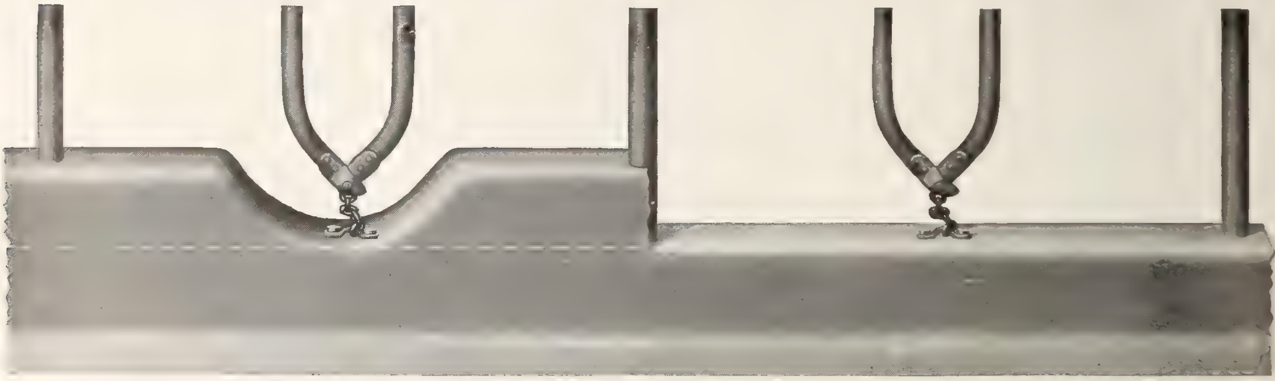


Fig. 1187

Fig. 1187 shows the difference between the ordinary level curb and the Louden High Built-Up Curb with cut-out for stanchion. The dotted line shows the difference in height.

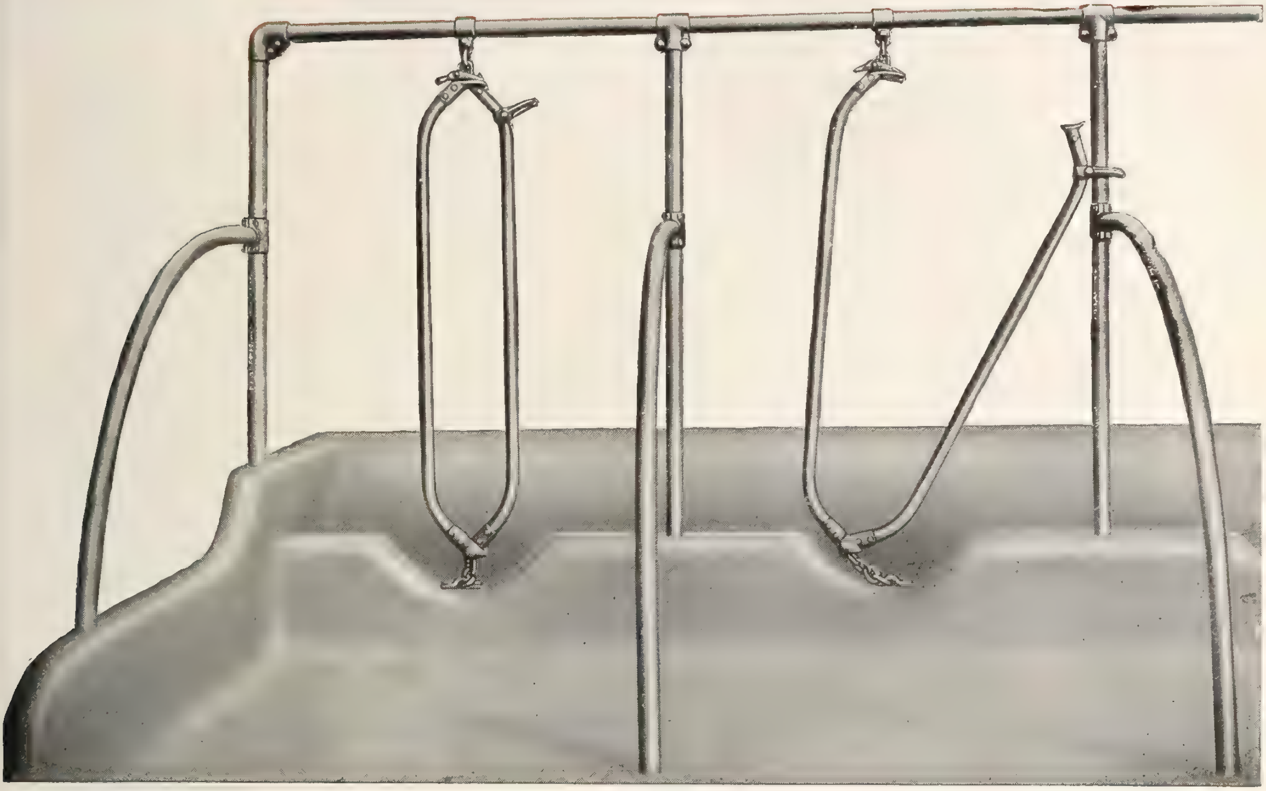
The Louden stanchion has a distinct advantage over any other type, in that it can be used with either the Built-Up Curb or the low level curb. Double-chain-hung or square bottomed stanchions, or those that require wide, flat anchors cannot be used with a Built-Up Curb. They must be hung on a level curb not more than 6 inches high, to allow the cow to lie down comfortably when in the stanchion.

The lowest point in the "cut-out" of the Built-Up Curb is the same height as the top of the ordinary level curb. The top of the curb is 5 inches higher.

This design allows the stanchion to hang low enough for the comfort of the cow but does not permit her to nose her feed out of the manger. Feed is never thrown out of the manger directly behind the cow's nose, but always to one side or the other.

With the Louden tools it costs no more to put in the High Built-Up Curb than the low level type. Its handsome design improves the appearance of the stall row, and the saving of feed commends it.

We are prepared to furnish all forms for manger and curb construction.



Louden Single Post Cow Stall—Fig. 796

Specifications

Sizes. The top-rail, stall posts and stall partitions are made of $1\frac{5}{8}''$ or $1\frac{9}{10}''$ O. D. steel tubing.

Note: The stall posts are 5 ft. 5 in. long and with the high built up curb go into the cement 15 inches. The lower ends of the partitions are pinned to ensure a better hold.

Illustration. The cut shows two stalls and one end section on the cross alley where the end curbs are located. When there is an alley at each end of a row of stalls, an extra end section is required for which an extra charge will be made.

Fig. 796 Stall Complete, consists of 1 Stall Post; 1 Stall Partition; 36 inches of Top-Rail (more or less); 2 Interlocking Dust-Proof Couplings; 1 Tubular Steel or Wood-Lined Stanchion; 1 Regular Stanchion Holder; 1 Guide or Hold-Open for Stanchion, and 1 Regular Stanchion Anchor.

End Section Complete, consists of 1 Stall Post; 1 Stall Partition; 1 Interlocking Dust-Proof Coupling, and 1 Single Piece Elbow.

Weights. In $1\frac{5}{8}''$ O. D. tubing the 796 stall weighs $51\frac{1}{2}$ lbs., in $1\frac{9}{10}''$ O. D. tubing, 55 lbs.

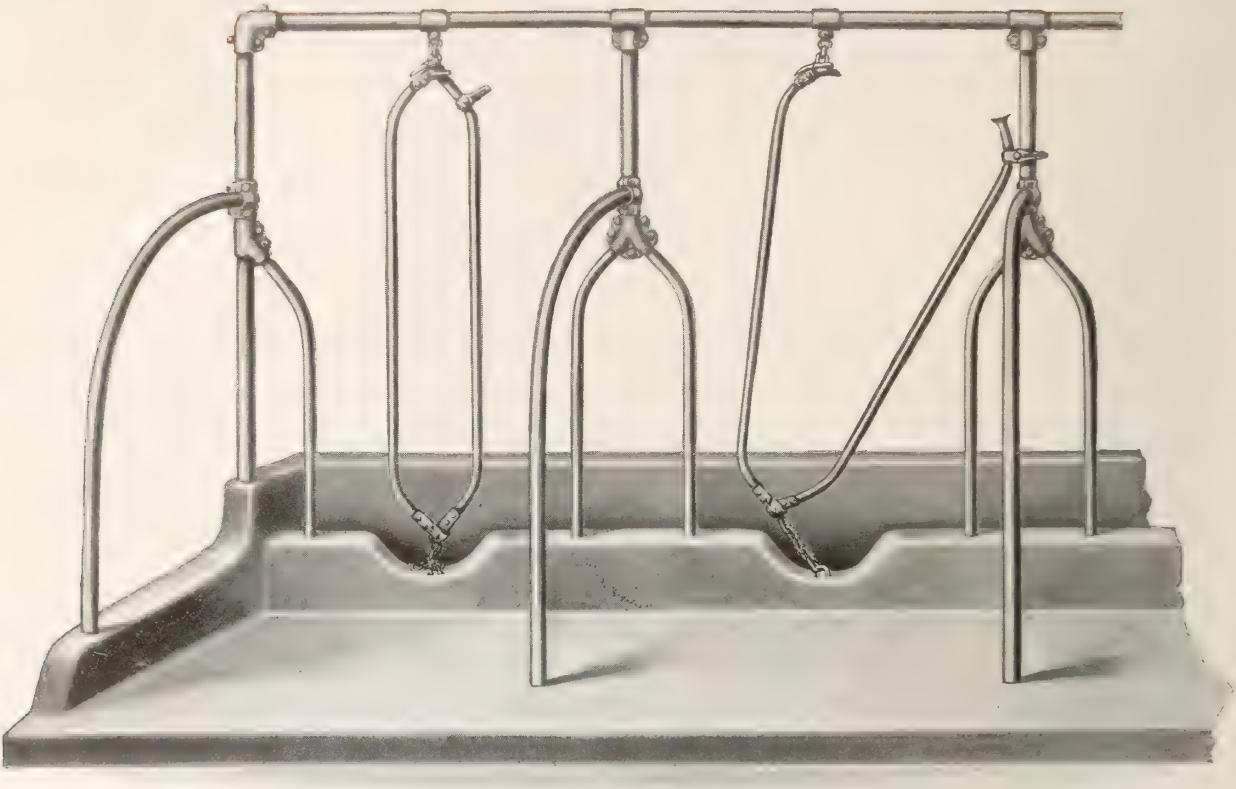
Note. When one end of a row of stalls is joined to a wall the end section at the other end will be counted as part of the stalls, but if a wall flange or a partition next the wall is used, or a post is set between the stanchion and the wall or is extended up to the ceiling, an extra charge will be made for these parts.

> Louden Machinery Co. of Canada, Ltd.
> Dear Sirs:
>
> Last Fall we remodeled our stables fitting them out with the Louden steel stalls, and can recommend them as being easy to operate, impossible for the cattle to unlock, and perfectly satisfactory in every respect. The mangers too, we built after your plan, and find they answer a double purpose, as they not only eat from them, but they drink from them as well, it having been inconvenient to install water basins on account of the cold weather.
>
> Yours truly,
> M. L. Haley,
> Springford, Ontario.

This is an excellent Stall for young stock or for small cows where it is not necessary to make the stalls over 3 feet wide. Many dairymen wish to provide for stabling young stock, especially heifers, until they are old enough to join the producing herd. These Stalls when equipped with our Narrow Stanchions are well adapted to this purpose. They are not recommended for cows requiring wider stalls because there would be too much space between the stall posts and stanchions, and the stanchions would open too wide unless stanchion side chains were used.

These stalls have our Interlocking Dust-Proof Couplings and other Louden features. The cut shows one of our Standardized Mangers with High Built-Up End and Manger Curbs—**the best that has ever been made.** Probably it is not necessary that so fine a manger be used with this inexpensive stall, but for all the difference there is in cost, hardly anyone would want to use the common manger.

Louden Y Post Stall—Fig. 811



The Louden Y Stall has proven itself the most popular of any Stall of any type on the Canadian market. The reasons for its great popularity are briefly as follows:

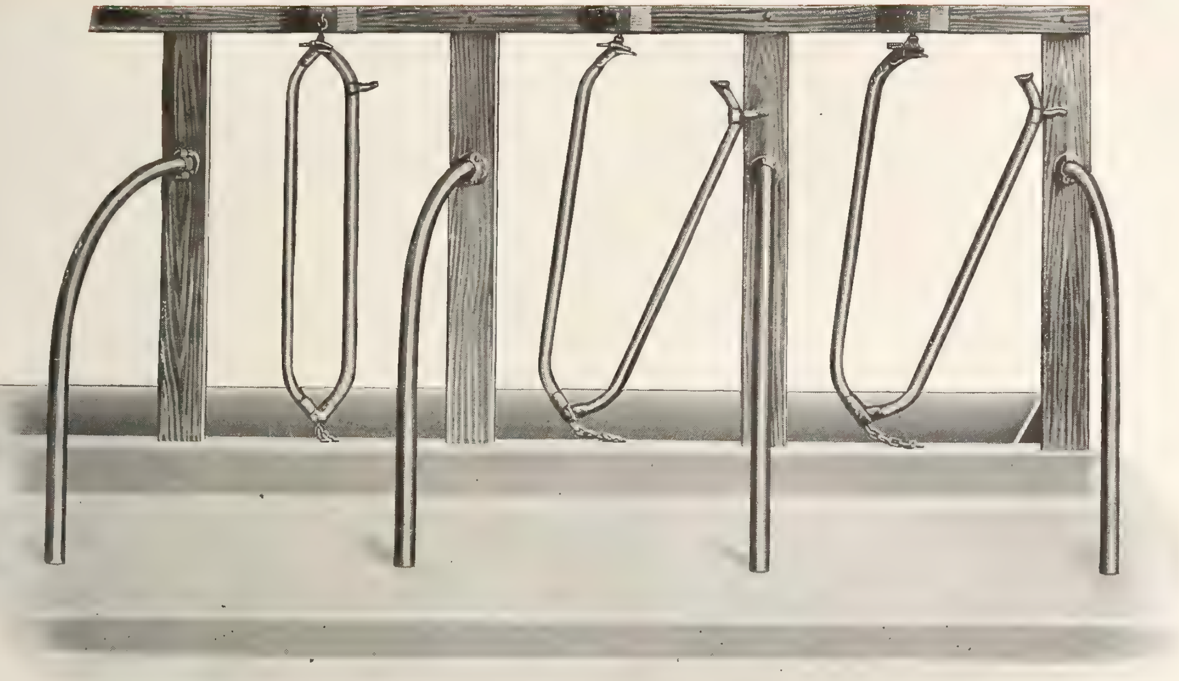
(1) **Correctly Proportioned.** To be entirely satisfactory a Stall must be so proportioned that not only will the cow have entire freedom when tied in her place, but the stall must be so constructed that when being brought into the stable she will place her head right into the stanchion, and be easily and quickly tied. The Louden Y Stall meets these conditions perfectly.

(2) **Perfect Freedom Provided.** When tied in this stall the cow is not hampered in any way, being at perfect liberty to turn her head freely to either side. In fact, she could turn her head no further or be more comfortable were she in the pasture.

(3) **A Sure Stop without Any Loose Movable Pieces** is provided by the Y Stall. When open the stationary side of the stanchion swings close to the Y leg of the Stall closing up the space between them and leaving but one place in which the cow can place her head, viz., right into the stanchion where she is wanted. This is a very much better SURE STOP than can be provided in any other way.

(4) **Prevents Waste.** The Y legs of this stall also prevent the animal from working hay and other feed out of the manger back under her feet, and wasting it. This is better understood when it is considered that with the ordinary single post stall there is eighteen inches between the bottom fastener of the stanchion and the upright of the stall. This space is reduced to 12 inches in the Y Stall, which, combined with the Louden cut-out curb, makes a manger curb from which no feed can be wasted.

(5) **Strongly Braced.** The Y legs and upright part of this Stall are also so firmly clamped together with our telescoping, dust-proof coupling that the Stall is very strong and better braced than though but one upright were used. In other words, the Louden Y Stall combines all the good features of a double or triple post stall while eliminating the disadvantages of a single post equipment.



Louden Simplicity Cow Stall—Fig. 951

We do not recommend any wood parts for cow stalls, especially since Government Inspectors in deal-ng with the recent outbreak of the foot-and-mouth disease have in some instances ordered the tearing out f all wood fixtures in dairy barns. Nevertheless, there may be some parties who have timber of their own which they can use and who can possibly save some money by so doing. To such parties our Simplicity Stall will appeal. It is inexpensive, and at the same time is in a certain measure, sanitary —easy to clean nd easy to keep clean.

The posts are made of 2 x 6, and the top-rail of 2 x 4 timbers. They should be dressed and painted to nake them easy to clean. The mangers and the curb should be of concrete, and if wood scantlings are sed for the curb, the space between them should be filled with concrete to prevent it from filling with bjectionable matter.

Specifications

Metal Parts. We furnish only the Metal Parts as ollows: Stall Partitions; Flanges to connect upper ends f partitions to stall posts; Stanchions; Bolts to connect pper ends of stanchions to top-rail; Guides (or hold-open) or stanchions; Stanchion Anchors. When wood floors are sed or cement floors are already in, Floor Flanges will be eeded, also Anchor Bolts. We do not furnish the bolts o join the wood parts together as they can be procured at ny hardware store. Directions are furnished for making nd setting up stalls.

Illustration shows our No. 3 Stall Partition which we ecommend and will furnish unless our No. 2 or No. 5 par-itions are specified. (See Fig. 994, page 79.) Also, our Tubular Steel Stanchions which we recommend and will urnish unless otherwise specified. There will be an extra charge for either the Five-in-One or Quick Adjustable Stan-chions, but no extra charge for our Wood-Lined Stanchions.

Finish. All the parts except the U bolts for stanchion nchors, which are sherardized, are coated with our Special Dairy Barn Paint or, if so ordered, will be galvanized at xtra prices given.

Cut shows three stalls and one End Section. When there s an alley at each end of a row of stalls, an extra End Section will be required for which an extra charge will be made.

Simplicity Fittings, complete for each stall, consist of 1 Stall Partition; 1 Post Flange; 1 Tubular Steel or Wood-Lined Stanchion; 1 Bolt to connect stanchion to top-rail; 1 Guide or Hold-Open for stanchion; 1 Regular Stanchion Anchor.

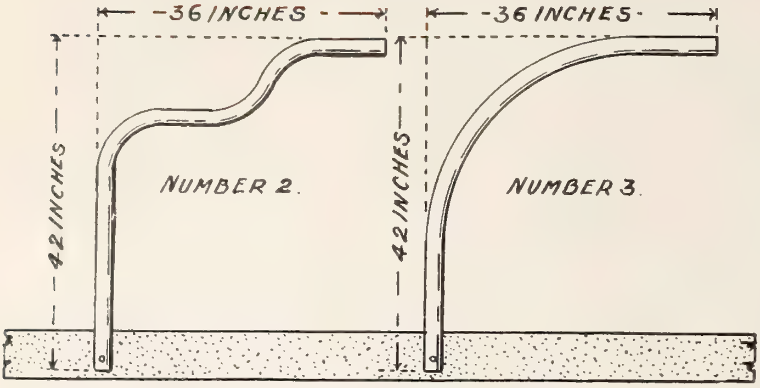
Simplicity End Section, complete, consists of 1 Stall Partition and 1 Post Flange.

Weights. Fittings for stall weigh 31 lbs.; End Section, 18 lbs.

Special. When the stall is to be set on a wood floor or on a cement floor already in, the lower ends of the partition will have to be cut 5 inches shorter and floor flange will be required together with lag screws for the wood floor and anchor bolts for the cement floor.

> Louden Machinery Company of Canada, Ltd.
> Dear Sirs:
>
> I am remodeling my barn and am using the all steel Louden stanchions again. We have used these cow stanchions about 12 years and they are good enough yet.
>
> Very respectfully, O. A. Hanneman.

Louden Stall Partitions



Specifications:

Made of $1\frac{5}{8}$" O.D. or $1\frac{9}{10}$" O.D. high carbon steel tubing. Height and width given in cut. Lower ends go 5 inches in the concrete, and anchor therein by a pin through the tubing.

Fittings—When used with our complete stalls the fittings are included, except where the partitions are to be set on a floor. In that case 5 inches will be cut off the lower ends, and Floor Hangers will be used.

Weights—No. 2 in $1\frac{5}{8}$" O. D. size, weighs $10\frac{1}{2}$ pounds; in $1\frac{9}{10}$" O. D. size, 14 pounds. No. 3 in $1\frac{5}{8}$" O. D. size, 10 pounds; in $1\frac{9}{10}$" O. D. size, $12\frac{1}{2}$ pounds.

The partition is an important part of a cow stall. It is necessary to prevent a cow from stepping on her neighbor and bruising her udder or crushing her teats when she is lying down. Also, to prevent her from turning sidewise and crowding an adjacent cow or soiling an adjacent stall. No cow stall is complete without partitions, and dairymen who have tried to do without them have finally been compelled to use them.

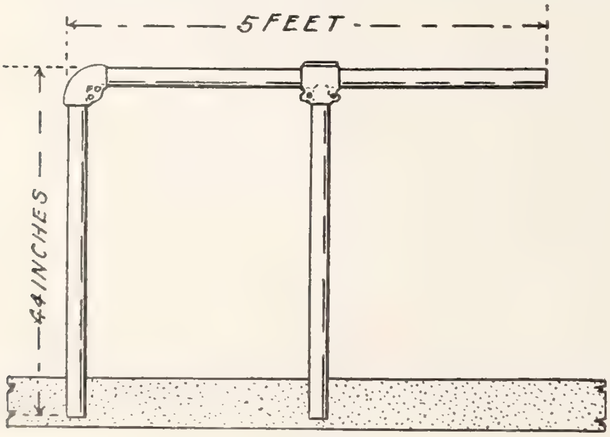
We make two different styles of partitions, as shown by figure 994. We recommend our No. 3 partition as being the most satisfactory. No. 2 is fancied by some people, especially those who have not had the greatest experience. We are the original designers of the No. 2, but our experience has taught us that it is not as good as the No. 3, for the following reasons:

1st.—The triple bend makes it weaker than the single bend. 2nd.—It is harder to line up, and will not line up at all when the view is quartering. 3rd.—There is a liability of the cow being crowded on to the flat part of the "Sway-Back" and hanging there so as to injure her udder. 4th.—If the cow should happen to get down under the partition it would be more difficult for her to get up from under the No. 2 than the No. 3.

However, this is a matter for purchasers to decide. If you prefer the triple bend (the Goose-Neck or the "Sway-Back" as it is sometimes called) to the plain, Single Bend Partitions, we have nothing further to say. The No. 3 partition will be furnished with all Louden stalls unless otherwise specified.

Finished Square Ends

In completing a row of stalls having one end next a passageway, experience has shown it to be an advantage to have the end cow kept in place by a Square End, as illustrated in figure 1300 shown on this page The horizontal extending back 5 feet from the head line prevents the animal from swinging around into the passageway, and by having the uprights set in a cement curb the bedding is kept in the stall, thus keeping the passageway clean at all times.



Specifications:

One piece, $1\frac{9}{10}$" O. D. Steel Tubing, 4 feet 10 inches.

Two pieces, $1\frac{9}{10}$" O. D. Steel Tubing, 3 feet 6 inches.

One L Coupling, $1\frac{9}{10}$".

One Tee Coupling, $1\frac{9}{10}$".

Also supplied in $1\frac{5}{8}$" O. D. Tubing with couplings to suit.

Weight in $1\frac{9}{10}$" size, 24 pounds. In $1\frac{5}{8}$" size, 20 pounds.

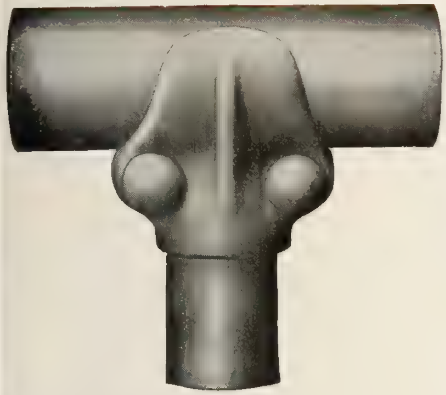


Fig. 1150

Louden Grip Clamp

(Patented April 7, 1914)

Fig. 1150 is a good representation of our Grip Clamp referred to in the specifications of our Figs. 810 and 959 Cow Stalls, and extensively used in all of our animal pens, hundreds of thousands of them being used for this purpose. It is the smoothest, neatest and best clamp of the kind ever made. It requires no holes to be drilled in the tubing. Only two bolts are used which are so located that they will exert **equal pressure** on all the adjacent parts of the tubing — a feature that is fully covered by our patent.

We make 8 sizes, outside diameter of the head tubing being given first. The prices of the different sizes with bolts, coated with our Special Dairy Barn Paint and galvanized, are given in the accompanying price list.

	Size		Size
No. 1	1⅞ x 1⅝	No. 5	1⅝ x $1\frac{5}{16}$
No. 2	1⅞ x $1\frac{5}{16}$	No. 6	1⅝ x $1\frac{1}{16}$
No. 3	1⅞ x $1\frac{1}{16}$	No. 7	$1\frac{5}{16}$ x $1\frac{1}{16}$
No. 4	1⅝ x 1⅝	No. 8	$1\frac{1}{16}$ x $1\frac{1}{16}$

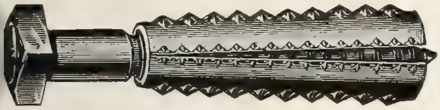


Fig. 879

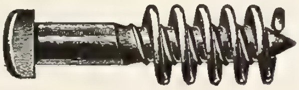


Fig. 1073

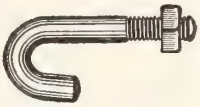


Fig. 727

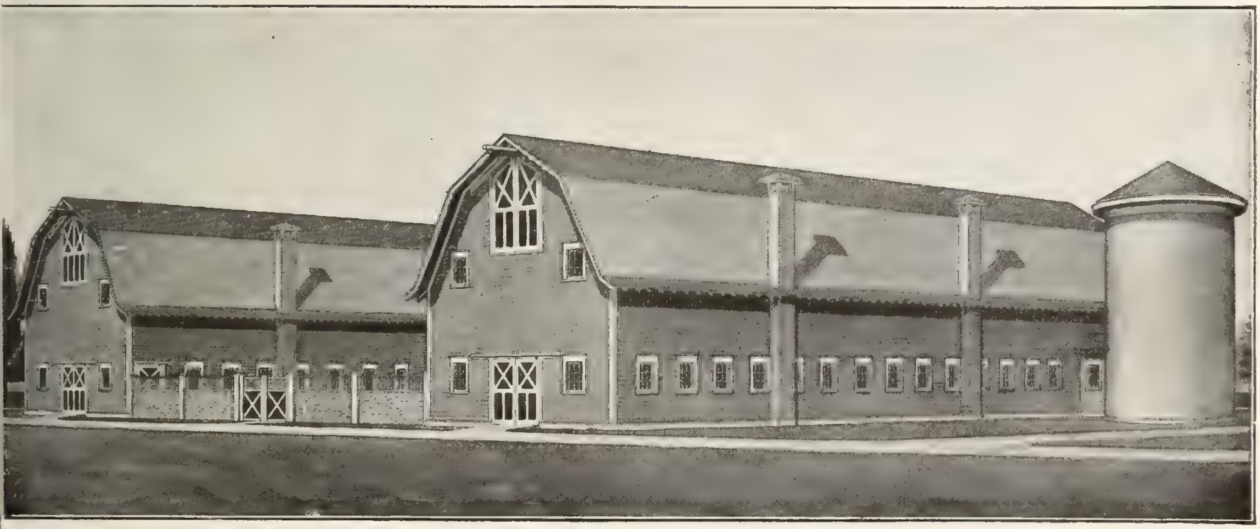
Anchor and Hook Bolts

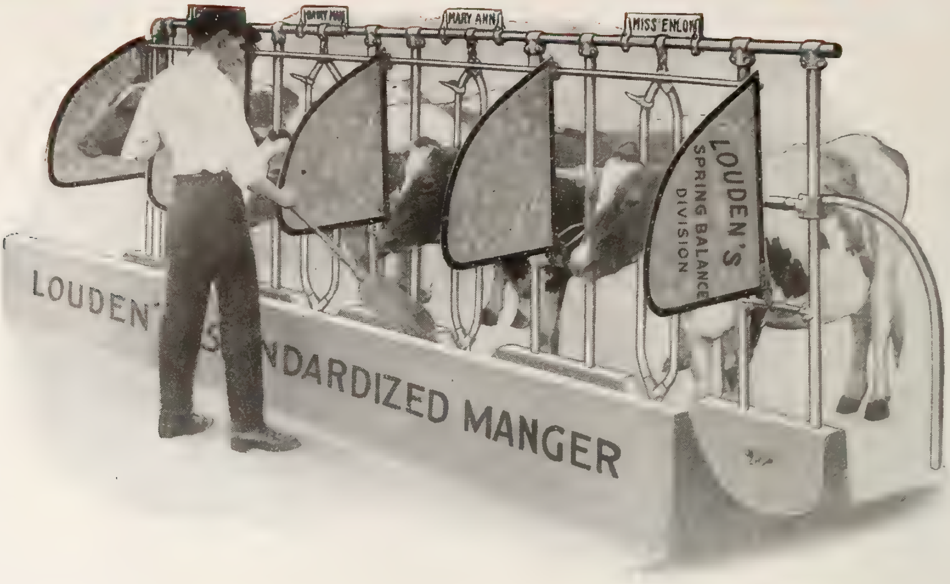
Fig. 879 is an Expansion Bolt which we use to make attachments to brick and hardened cement work.

Fig. 1073 is a smaller view of an Anchor Bolt to make attachment to either green or hardened cement work. It is provided with a Helical Steel Lining and is set in a hole which is bored with a common auger bit in green cement or drilled with a star drill in hardened concrete, the hole and the lining being filled with soft cement before inserting. The bolt can be readily taken out or replaced when the cement hardens, the lining remaining.

Fig. 727 is a Hook Bolt to fasten stanchions to wood top-rails.

We furnish only the sizes necessary to attach the fittings used with our equipments.




MARY ANN
MISS ENLOW
LOUDEN'S SPRING BALANCE DIVISION
LOUDEN'S STANDARDIZED MANGER

Louden Spring Balance Manger Divisions—Fig. 1020

Specifications

The Dimensions. All of our Manger Divisions are 24 inches high where the hinges are placed. The other dimensions are given in Plate 14.

The Material. All the Divisions are made of No. 18 galvanized sheet steel. Each Division is reinforced entirely around the edge with heavy iron, giving it great strength and rigidity.

The Brace Rod is made of $1\frac{1}{16}$ O. D. steel tubing and is attached by malleable iron clamps which are bolted to the reinforcing irons so as to hold them rigidly in place.

The Springs. The lighter spring is made of $\frac{1}{4}$ inch and the heavier spring of $\frac{5}{16}$ high-grade spring wire—the best that can be procured. Generally two springs are used on a section of 4 divisions, 3 springs on a section of 5 divisions and so on. If the heavier springs are used a less number may be required.

The Finish. The sheet steel of which the divisions are made is galvanized, and then the whole is coated with our Special Dairy Barn Paint. If the fittings are to be galvanized there will be an extra charge for this extra work.

Louden Spring Balance Manger Division complete consists of 1 Galvanized Division of the size specified, 42 inches (more or less) of $1\frac{1}{16}$ O. D. Tubular Brace Rod; 1 Single Hinge for each end division; 1 Single Pivot Clamp for each single hinge; 1 Double Hinge for each central division; 1 Double Pivot Clamp for each double hinge, provided stalls with central posts are used. With the Louden Double Post Stalls, 1 Pivot Pin and 2 pair of Grip Clamps to attach the pivot pin to the stall posts are used in place of the double pivot clamp. **In ordering specify the size of posts.**

The Spring Outfit. Each Spring Outfit consists of 1 Louden Special Coil Spring of the size to suit requirements; 1 Clevis and 1 Holder for spring.

Weights. With hinges and their connections complete as specified are as follows: New No. 2 Division about $16\frac{1}{4}$ lbs.; No. 3 Division about $18\frac{1}{4}$ lbs.; No. 4 Division about 20 lbs. The weight of the spring outfit is about $3\frac{3}{4}$ lbs.

Louden Hold-Down Hook for Manger Divisions

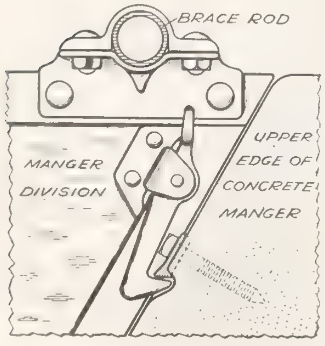
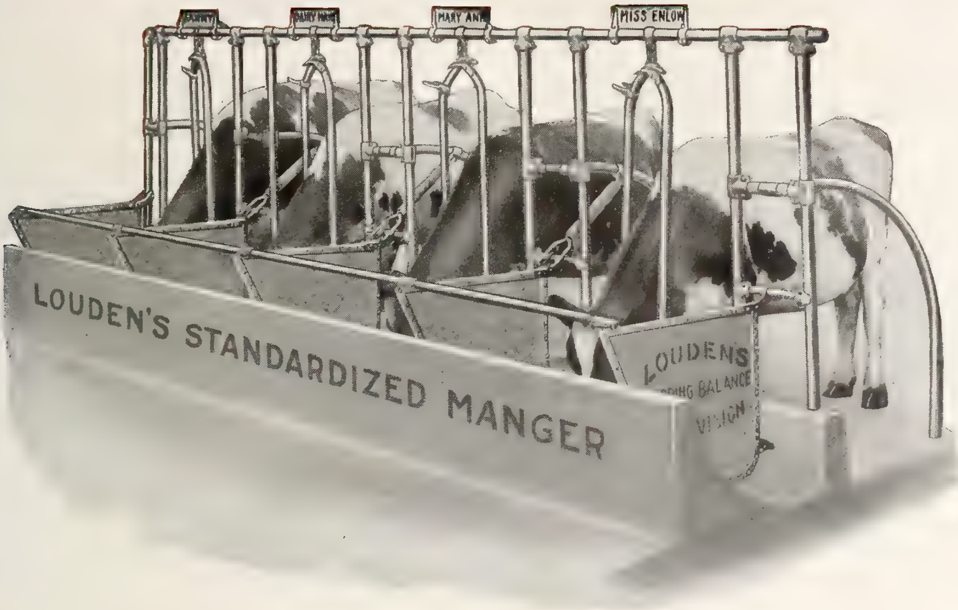


Fig. 1186

Fig. 1186 is a side view of our Hold-Down Hook for Manger Divisions. Usually this hook is not needed. The manger springs could be adjusted so it would be impossible to root up the divisions but it would make them heavy to lift for cleaning. By using our Hold-Down Hook the cows **cannot root up** the divisions, and at the same time they will be **easy to lift**. The hook catches automatically and is easily unlatched by pressing a finger on its upper end. The hook catches against a plate secured to the concrete by two anchor bolts.

Keepers like that shown by Fig. 1072 are secured to the inner side of the curb as shown in Figs. 1018 and 1020 to support the lower corners of the divisions and prevent husky cows from pushing them out of place.

Fig. 1072


MARY ANN
MISS ENLOW
LOUDEN'S STANDARDIZED MANGER
LOUDEN'S SPRING BALANCE DIVISION

Louden Spring Balance Manger Divisions—Fig. 1018

(Patent Pending)

Fig. 1018 shows a Louden Standardized Manger fitted with a section of our Spring Balance Manger)ivisions which are made to fit the manger. How comfortable the cows look, each eating her apportioned eed without interference from her neighbor — the shape of the manger bringing the feed close so she does .ot have to strain to get it, and the manger divisions preventing her from straining to get the feed belong- ıg to her neighbor.

The Individual Manger is an advantage in a number of ways. It prevents the fast-eating cow from obbing the slow-eating cow — the one getting more than is good for her and the other not getting enough. 'he amount of feed can be varied to suit the individual cow and different kinds of feed can be given to .ifferent cows to suit their requirements. It prevents the cow from straining and injuring herself in trying o get the feed in the adjoining section. It helps to prevent one cow from infecting another. In short, t enables the dairyman to feed and handle his cows as his best judgment tells him they should be fed and andled, instead of each cow striving to help herself.

The Divisions are made of heavy galvanized sheet steel and are hinged to the stall posts so they can be aised for cleaning the manger. They are connected together in sections by means of a brace rod, as shown ı the cut, so that all the divisions in the section can be raised at one operation instead of only one at a time.

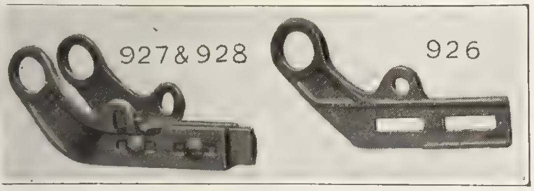


Fig. 1153

Malleable Iron Hinges are used as shown by Fig. 1153, pattern 926 being the single hinge used at the outer ends of the sections, and patterns 927 and 928 being the double hinges used on the central divisions. These hinges are connected to the stall posts by pivot clamps when used with stalls having central posts. With our Double Post Stalls the hinges are connected to pivot pins which are attached to the posts by our Grip Clamps, as shown in the cut.

To assist in raising the divisions and to hold them in elevated position, as shown in Fig. 1020, we use **pecial Coil Springs** which are attached to some of the central hinges by means of clevises, the upper nds of the springs being adjustably connected to the stall partitions. Two sizes of springs are used, each aving a working strength of from 300 to 500 pounds according to size and adjustment.

When the Divisions are raised halfway up they will be held in a **perfect balance** at any higher point ˈithout any additional assistance whatever. The attachment of the springs is such that they can be ad- ısted to help **hold the divisions down** when feeding and thus prevent the cows from nosing them out f position. With the different sizes of springs and with the complete and convenient adjustment any size r weight of Manger Division may be balanced to perfection.

A Few Words About Stanchions

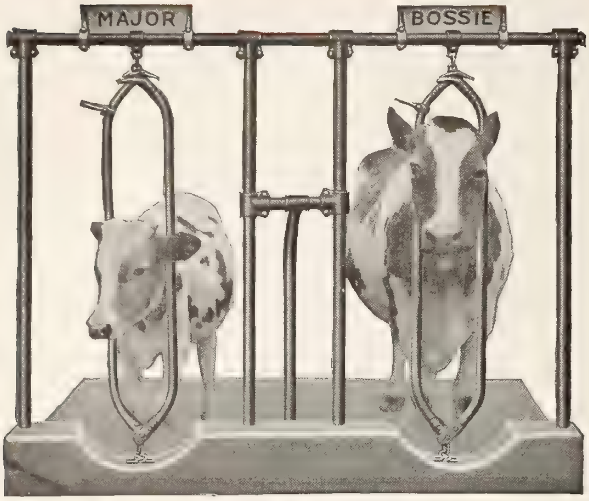


Fig. 1157

There is nothing of greater importance in Dairy Barn Equipment than the Stanchion by which the cow is held. It should be strong and durable to hold the cow securely and yet allow her all the **freedom of movement** necessary for her comfort. A rigidly hung stanchion should not be permitted, and if the law against cruelty to animals was strictly enforced it **would not** be permitted.

The cow must be made comfortable to produce the most milk and return to her owner **the largest profits.** Therefore the stanchion must be flexibly hung so its lower end will be free to swing in a circle of 8 to 10 inches. This is necessary to allow the cow to pitch forward in getting up and lying down without jamming her shoulders against the stanchion and to avoid cramping her neck in lying down at one side or the other of the stall.

The stanchion should be as smooth as it is possible to make it, so it will always be **easy to clean and easy to keep clean.** Also, to make it easily disinfected when this is necessary. There should be **no cracks or crevices** anywhere to catch and hold dirt or to furnish breeding places for disease germs.

There should be **no square corners** to rub against the cow's neck. This applies with greater force to the lower end of the stanchion than it does to the sides, because a cow when in her stall will be lying down half the time, and her neck will be in contact with the lower end of the stanchion.

The lower ends of the stanchion bars should always be **sloping or well rounded** and never flat nor have square or sharply rounded corners. This is necessary to prevent the cow from getting her front foot caught between the manger curb and the lower flat or square end of the stanchion and having it seriously injured. A number of cases have occurred in which valuable cows have been ruined in this way.

The hinges at the lower end should be exceedingly strong and be **laterally rigid** to prevent torsional displacement of the stanchion sides in which case the latch at the upper end will fail to register with the catch on the hinged side. There should be no flat surfaces on the hinge castings to catch and hold dirt nor sharp corners to injure the cow's neck.

The latch should be **strong and absolutely animal proof,** and at the same time, be easily unlatched. A "Push-Down" latch is better than a "Lift-Up" or a "Turn-Around" latch, because it can be opened with one hand, closed or mittened, which cannot be done with the other kinds of latches.

The Louden High Carbon Tubular Steel Stanchion shown on other pages, has all the good points enumerated and is, without any question, the best stanchion manufactured. It is decidedly the strongest stanchion in the market, the tubes of which it is made measuring 4½ inches in circumferences as against 2⅜ inches for the "T" steel of which many stanchions are made. It is also the neatest and smoothest, and has no **"dirt catchers"** or other objectionable features.

The Louden Tubular Steel Stanchions are made in three different widths—5½, 7 and 8½ inches, (Narrow, Standard and Wide). These sizes will fit the smallest or largest cows. Some people have the mistaken idea that a stanchion, like a hat or a coat or a pair of shoes should fit closely. On the contrary **it should never fit closely.** The **looser the better** provided the cow cannot pull her head through. Fig. 1157 shows a large cow and a six-months old calf, each securely **held by the same size Louden Tubular Steel Stanchion.**

With the three sizes we make any cow, from the smallest to the largest, can be securely and comfortably held, 90 per cent of them requiring only the standard or 7-inch size. A large, beefy-neck cow will occasionally require the wide or 8½-inch size, and occasionally it would be better to have the narrow or 5½-inch size for an exceedingly small cow or heifer.

One size of stanchion can generally be taken out and a different size put in as easily and quickly as an adjustable stanchion can be adjusted, and you can buy Louden Tubular Steel Stanchions for 30 to 40 per cent less money than you will pay for adjustable stanchions.

The Louden Tubular Steel Stanchion has stood the **test of time** and is growing more popular every day. Half a million are already in use in all parts of the world and the sale is rapidly approaching the million mark. In the long run it is cheaper than a halter and is much more convenient. As a cow tie the Louden Stanchion is safer and better in every way.

Louden High Carbon Tubular Steel Stanchion—Continued

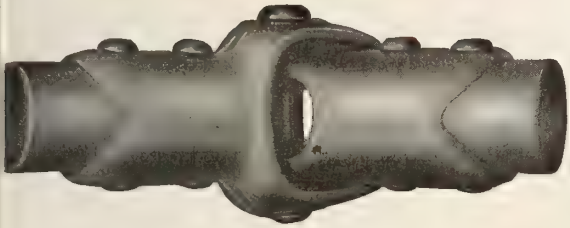


Fig. 1158

The **great strength** of the **Louden Reinforced Stanchion Hinge** is readily seen by an inspection of Fig. 1158. The hinge castings are made in our own foundry of the best high-grade malleable iron. The castings are shaped to practically **encircle** the lower ends of the stanchion sides which are made of $1\frac{5}{16}$ High Carbon Tubular Steel and are securely connected thereto by **four heavy rivets.**

The pivot end of the hinge is made **twice as wide** as the pivot ends of other stanchions and the looped end helps to support the other end. A large pivot pin sses through **four thicknesses** of malleable iron spread apart to make them bracing. It is therefore **much greater strength** than other stanchions, especially in the **torsional or twisting strain** where arly all other stanchions are weak.

There are no flat surfaces on the Louden Stanchion Hinge where dirt will collect. The ends being ›ping and rounded, debris will roll off and if any should get in the joint the opening in the center will let pass through. If disease should get into the barn the stanchions can be dipped in a disinfecting solution ıich will reach every part, inside as well as outside, and will destroy every germ which may be making s dwelling place there.

The **latch spring** is especially reliable and is completely protected. If a new spring should ever be eded, which is seldom the case, it can be sent by mail for a few cents, and by removing one small bolt can be quickly put in place.

If the barn should ever burn that will not necessarily put our Tubular Steel Stanchions out of commis›n. The barn of Mr. L. W. Putman of Frederick, Md., having a Louden Tubular Steel Stall Equipment cently burned and in two days he had **a shed over the stalls** and stanchions, and was using them the me as ever. There was nothing injured by the fire except the latch springs of the stanchions, and these sent him free of charge by parcel post.

Mr. Putman, under date of April 20, 1915, writes as follows:

"Last fall my barn containing some 1200 bushels of grain and 100 tons of hay and provender caught fire and burned to e ground. The most remarkable thing about this fire was the condition of the Louden Stalls which were in the basement. ıe entire weight of the timbers and the heat of the fire went into these stalls. I thought they were ruined but after aring the debris away I found they were **absolutely intact.** I built a temporary roof over them and in two days I was ng them the same as before the barn was burned. I think this is a remarkable test of the quality of the Louden Stalls."

The best material of which a stanchion can be made is **High Carbon Tubular Steel.** It is the ·ongest as well as the lightest and is also the easiest to keep clean. It has no sharp corners to injure the w's neck; no cracks or crevices to harbor disease germs, nor built-on strips to work loose and come off.

The chains by which the stanchions are hung and anchored to the curb are made of the best quality of ›el wire approximately $\frac{3}{8}$ of an inch in diameter, and its tensile strength is 5000 pounds—strong enough hang up three large cows by the necks. Why use a double chain at the lower end of your stanchion to strict and hamper the freedom of the cow.

The Louden Tubular Stanchion is the essence of simplicity. It has no complicated trouble-making rts to get out of order. It can be used almost anywhere, in the smallest as well as the largest barn—for e largest or the smallest cows—in a common wood frame as well as the most up-to-date cow stall. No e who keeps cows, whether one or a hundred, can afford to do without Louden Stanchions.

We call attention to our patent No. 990,827, dated April 25, 1913, which covers the main features of r Stanchion, including the Hinge, the Latch and the Sloping Ends. Beware of infringements.

Specifications

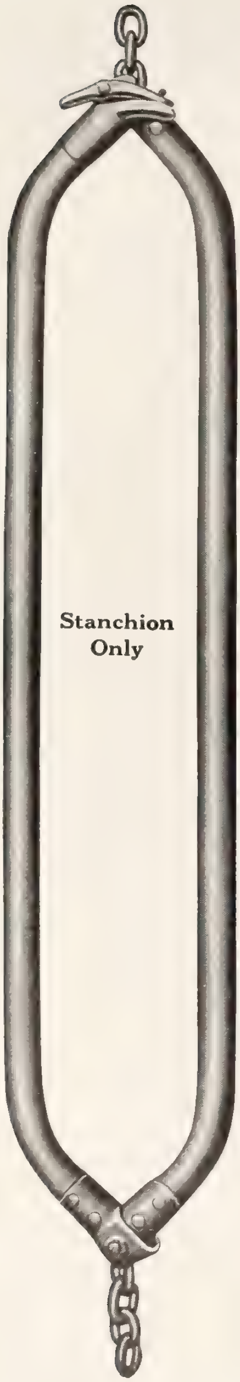
Three Sizes. Narrow, having a width of 5½ inches; andard, 7 inches, and **Wide,** 8½ inches, all in the clear d all having a length 45 inches in the clear, and 57½ inches ɪm end to end of the chains. **Standard size will always furnished unless otherwise specified.** Space from ›-rail to curb must be 4 feet 7 inches (55 in.) to hang ınchion properly.

Equipment. Stanchions are furnished in four ways as ›wn by cuts on opposite page. 1st, the Naked Stanchion; the Stanchion with Guide or Hold-Open; 3d, Stanchion :h Holder and Anchor; 4th, Stanchion with Guide, Holder l Anchor. For convenience the Attachments are left off l packed separately in shipping.

Weights. The naked Stanchion, standard size, weighs 15 lbs.; with Guide, 15½ lbs.; with Holder and Anchor 16 lbs.; with Guide, Holder and Anchor, 17 lbs. The Narrow Stanchion weighs a little less and the Wide Stanchion a little more.

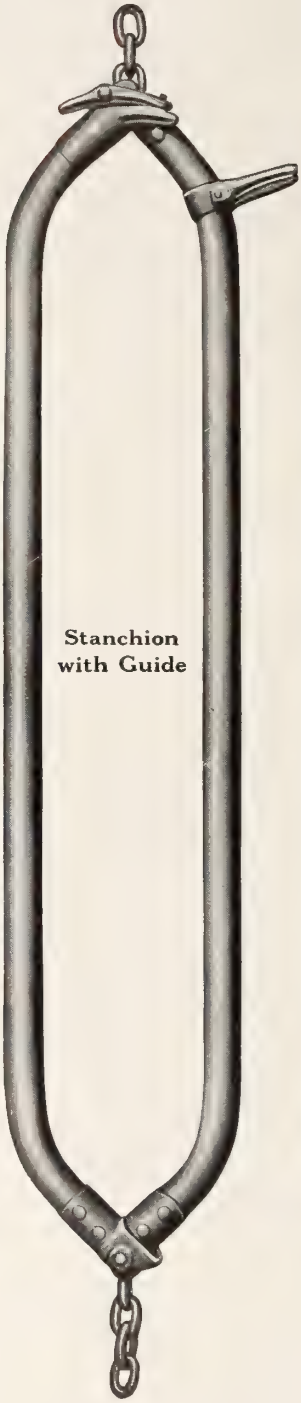
The Holder is made to fit 1⅝ and 1⅞ O. D. tubing. **Be sure to specify size in ordering.**

Louden Tubular Steel Stanchions—Continued



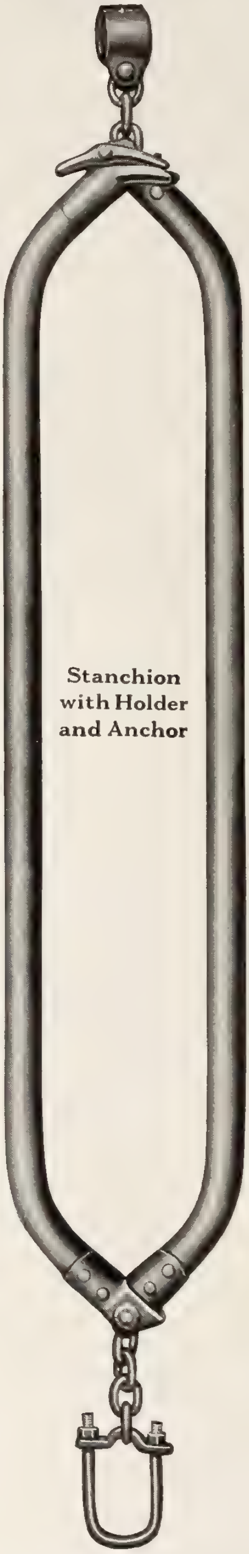
Stanchion Only

Fig. 861



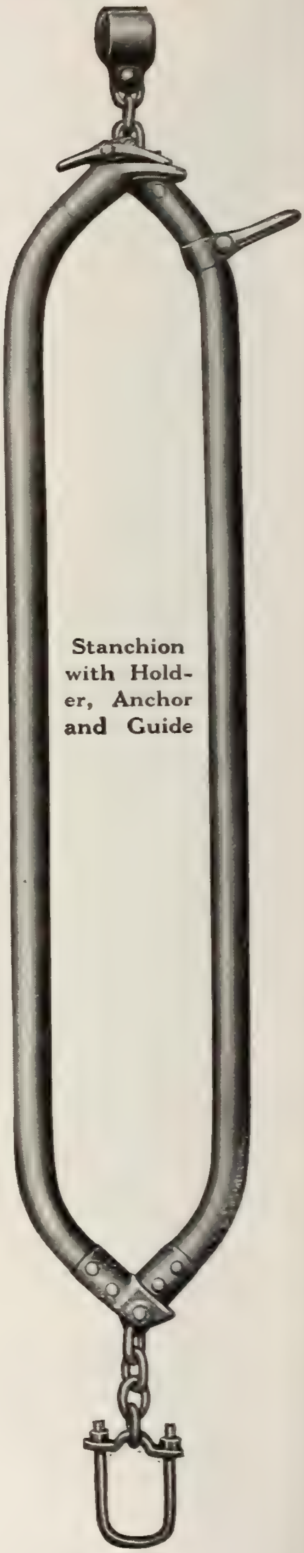
Stanchion with Guide

Fig. 861-A



Stanchion with Holder and Anchor

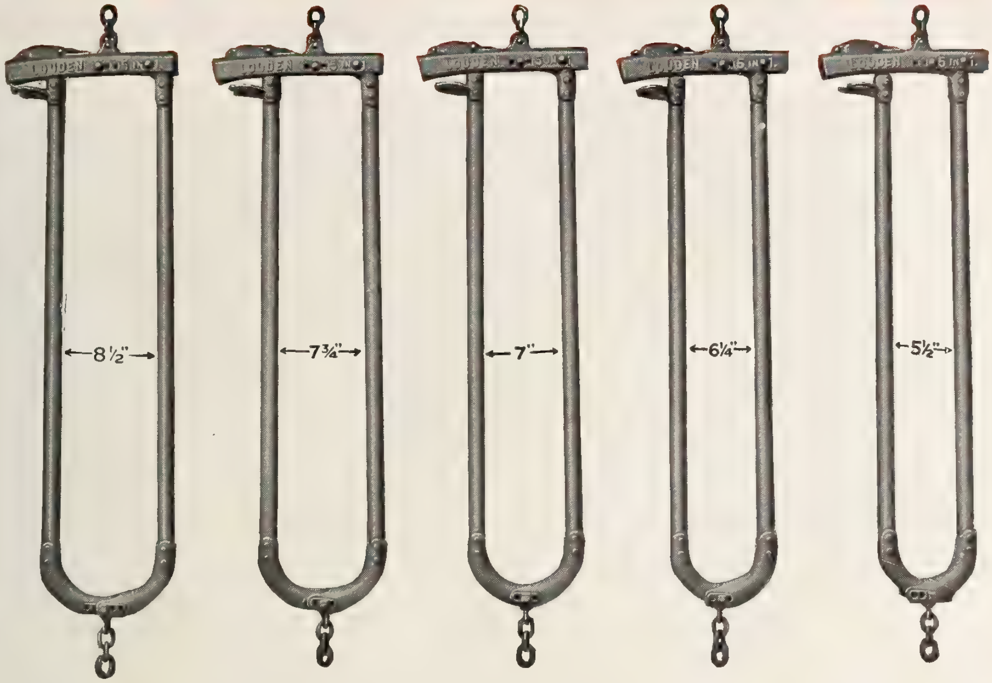
Fig. 861-C



Stanchion with Holder, Anchor and Guide

Fig. 861-B

Louden Tubular Steel Stanchions—Naked and with Attachments



Louden 5-in-1 Stanchion—Fig. 1161

The "**Louden 5-in-1**" may be called an "**Adjustable Stanchion**" but it is hardly that in the common acceptation of the term. It cannot be adjusted from one width to another by turning a screw or tightening and loosening a "slip-joint," like regular adjustable stanchions. Each of the hinge irons have **three separate holes,** in any one of which the hinge bolts may be placed. The head of the stanchion is made to set in three different positions on the rigid side, and the hinged side is arranged to latch in three separate positions by changing the central bolt, B. (See Fig. 1162).

By this means the stanchion may be set in five different widths 5½, 6¼, 7, 7¾ and 8½ inches wide in the clear. In whatever position it may be set it will **stay there** and will be just as solid and unchangeable as if that was its only width. In short it is a stanchion which may be set in five different widths, thus combining five different sizes in a single stanchion, hence its name "5-in-1."

The sides are straight pieces of high carbon tubular steel. The hinges of refined malleable iron are rounded as shown in the cuts so as to encircle the lower ends of the sides and are secured thereto by four rivets. Fig. 1162 is an interior view of the head, the front plate which is of malleable iron being removed to show the latch, L, and other interior parts. The rack, R, in which the latch works acts as a support to the upper end of the hinged side, retaining ribs, being formed on the inner sides of the end of the head plates, H, and on the ends of the rack, so they cannot be drawn past each other.

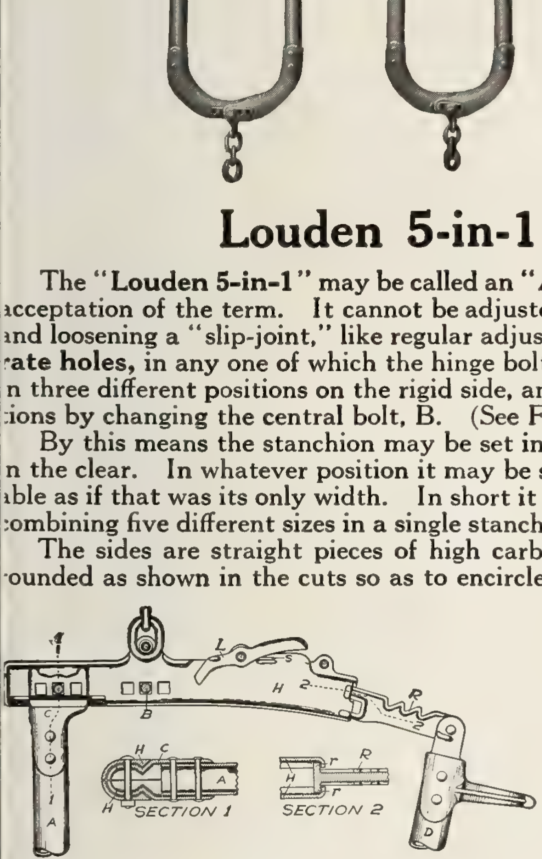


Fig. 1162

This arrangement prevents the side from being opened out too wide and does away with the need of a stop on the hinge. It has no top support and the hinge is fitted with a stop to prevent it from opening too wide. It has a push-down latch which catches the rack automatically and is completely protected by the head plate so a cow cannot reach it with her horns. It is easily changed from one size to another.

Specifications

The Louden 5-in-1 Stanchion is 45 inches long in the clear. The sides are 1$\frac{5}{16}$ O. D. high carbon tubular steel. From end to end of the chain is 57½ inches. The space from the top-rail to the curb must be 55 inches.

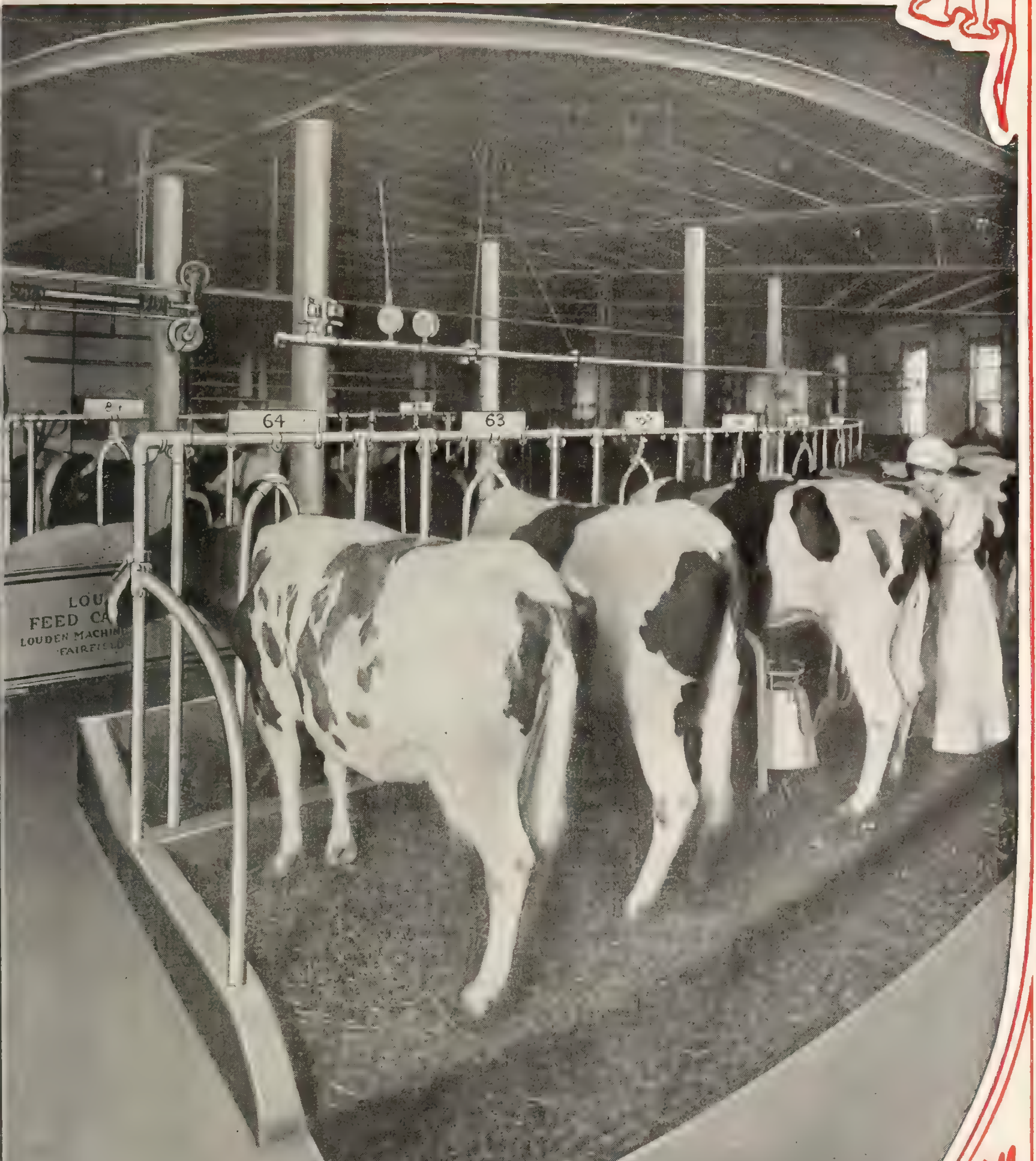
Weights, etc. The Stanchion is furnished in two ways, either naked or with Interlocking Holder and regular Anchor. The Naked Stanchion weighs 23½ lbs.; with Holder and Anchor it weighs 24¾ lbs.

The Holders are made for 1⅝ or 1⅞ O. D. top-rail.

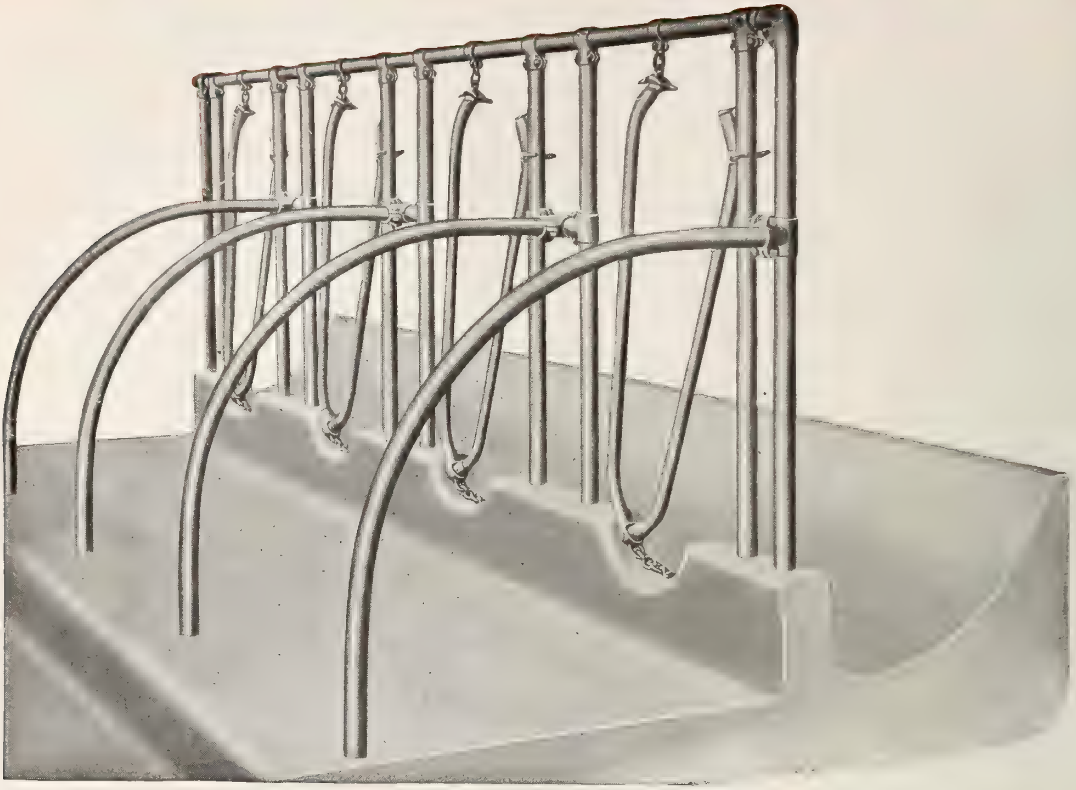
Be sure to specify the size wanted.

> Louden Machinery Co. of Canada, Ltd.
> Dear Sirs:
> The litter carrier and hay fork that I bought three years ago from your general agent have proved very satisfactory. I remain,
> Yours truly, L. R. Smith,
> R. R. No. 2, Abercorn, Quebec

The above shows one of the largest and best dairy barns in
United States, and is supposed to be as sanitary as it possibly



ou will notice that Louden Equipment is used throughout, Stanchions, Litter Carriers, Feed Carriers, etc.



Louden Standardized Mangers—Fig. 1152

One of the most important things in the construction of cow stalls is to make the manger the proper size and shape to suit the various requirements of the different kinds of cows and the different methods of feeding, and at the same time have them **standardized** so any needed metal work can be readily made to fit the manger. Heretofore there has been no recognized standard. Mangers have been built in almost every conceivable shape and style to suit the fancy, and without any effort to secure uniformity.

Louden Standardized Mangers have been devised to overcome the troubles resulting from this lack of uniformity. The designs presented are on **correct scientific lines,** and are believed to be the most complete ever offered. While substantially uniform in all their curves and lines they are readily adapted to be made different sizes to suit different sizes of cows and different methods of feeding.

The standard **curb** is made 5 inches thick and 11 inches high above the stall floor—10 inches above the lowest part of the manger bottom (5 inches higher than usual), and the **corners are rounded** so they cannot in any way injure the cow. Where the stanchion is anchored the curb has a semi-circular **Cut-Out** 5 inches deep and 16 inches wide at the top, which also has rounded corners. This permits the stanchion to be **hung low** while the **curb is high,** thus giving the **cow perfect freedom** as well as **ample throat room** when lying with her head low down, and prevents her from nosing her feed out over the high curb at the sides. The side of the manger next the curb instead of having the usual sharp corner which prevents the cow from cleaning up her feed and furnishing a place to catch and hold dirt, has a four-inch radius which **fits the cow's nose** nicely and makes it easy to keep the manger clean. The other side has a radius of 24 or 30 inches (according to size), centered from the same perpendicular line, which makes the lowest part of the manger within 5 inches of the curb. The far side of the manger raises on a gradual curve so the feed naturally **rolls down toward the cow.**

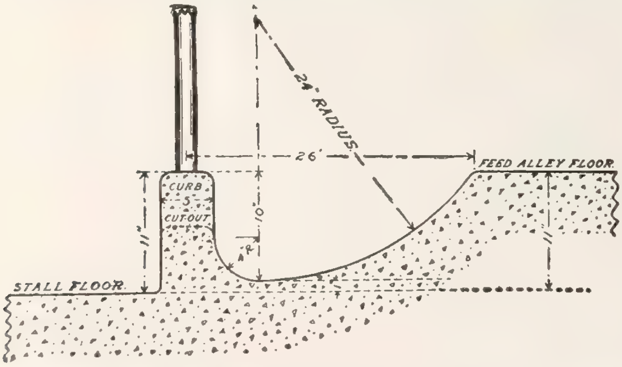


Fig. 1001 Louden Low Cement Manger, with Raised Feed Alley Floor

Louden Standardized Mangers

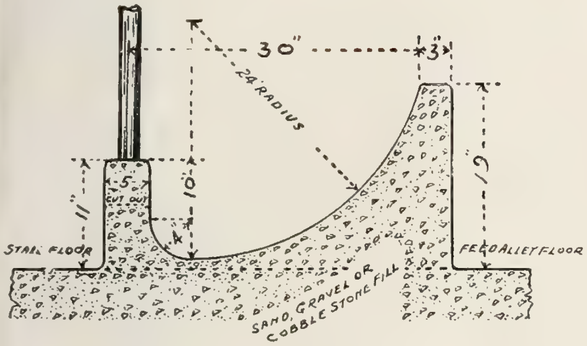


Fig. 1002

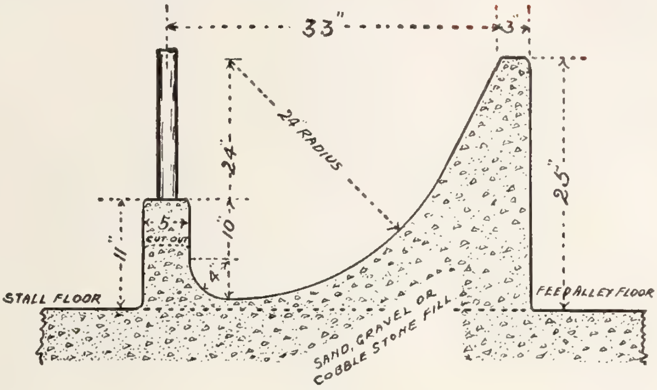


Fig. 1003

With our **Patent Cut-Out Forms** (see **Fig. 970**) our **High Cut-Out Curb** is made as easily as a low level curb and it is a hundred per cent better. It is in reality a **"High Built-Up Curb,"** because it is the Standard Height where the stanchion is anchored, and it is 5 inches higher on the sides.

There are no cracks or crevices or pockets anywhere in our mangers to catch and hold dirt and form breeding places for disease germs. Beware of "dirt catchers" in your mangers.

Sizes of Mangers: These mangers are made in five different sizes, varying from 19 to 33 inches in width, and the outside edge of the manger from 5 to 25 inches high.

Fig. 1001 is a cross-section view of our Low Cement Manger, (radii 4 inches and 24 inches), with Raised Feed Alley Floor—a style well adapted for common use. **Fig. 1002** is our High Cement Manger, standard size, (radii 4 inches and 24 inches). **Fig. 1003** is our Extra High Cement Manger, standard size, (radii 4 inches and 24 inches). These sizes are well adapted for average cows.

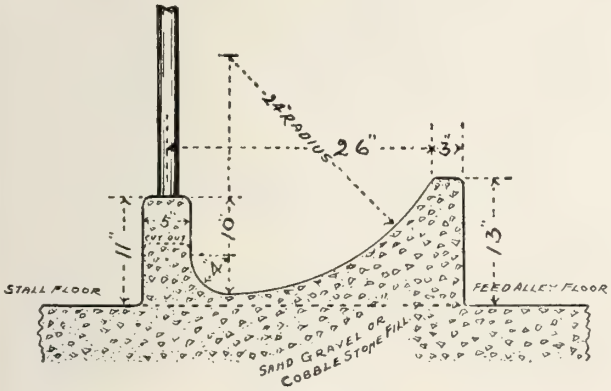


Fig. 1004

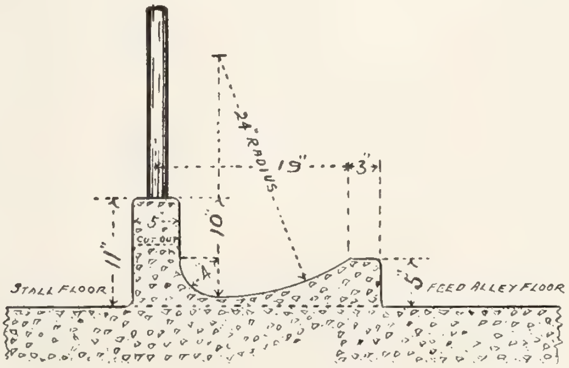


Fig. 1005

Fig. 1004 is our Low Cement Manger, (radii 4 inches and 24 inches).

Fig. 1005 is our Extra Low Cement Manger, (radii 4 inches and 24 inches), used with spring balance Mangers.

Our Standardized Mangers and our improved methods of constructing them, are everywhere conceded to be greatest improvements recently made in Dairy Barn Equipments. These improvements are so much ahead of designs and methods that they mark a distinct epoch in the development of dairy equipments. Leading dairymen everywhere approve our Standardized Mangers and Agricultural Colleges, in this and other countries have adopted our directions for the instruction of their classes.

Constructing Louden Standardized Mangers

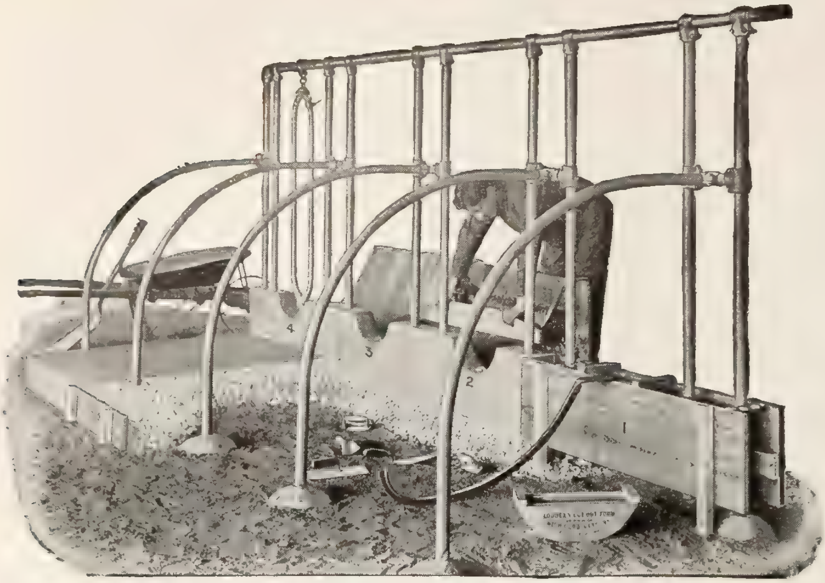


Fig. 1155

Fig. 1155 shows the different steps in the construction of Louden Standardized Mangers. 1st, the stalls are set up and **lined up as true as line and level can make them.** 2d, the form-boards for the curb are set up to **correspond with the stalls** and the cement is then put in, using our patent cut-out forms to make the cut-outs in the curb. 3d, the curb form-boards are removed, the corners of the curb are rounded and the form-boards for the manger are set up. 4th, the templets for the manger are set in place and the cement is then put in. 5th, after the cement has set sufficiently, the templets and form-boards are removed and the manger is smoothed up. After this the stall floors, the gutters, and the litter and feed alley floors are constructed in the order most convenient.

We furnish **Complete Detailed Instructions** for doing the work. Also, the necessary Tools and Appliances.

Some parties advise putting in the cement work first and setting up the stalls afterwards, connecting the stall posts and partitions to the floors and curbs by anchors set in the cement. Our advice may be stated in one word—"DON'T".

It is practically impossible to get a first-class job in this way. No matter how careful or how particular the cement worker may be he cannot set anchors accurately enough to have the stalls line up properly. If they should be the least bit out of place it will throw the top-rail out of line and your row of stalls will be as crooked as the proverbial "dog's hind leg." The stalls will not be as strong as if the posts were set in the solid concrete. There will be a **"dirt catcher"** at the bottom of each post—the very place where there should be no refuge for dirt.

If the anchors should happen to be set wrong they would have to be torn out and the work done over again. Sometimes when the stalls are set up the owner will see some changes that should be made in the plan, but this cannot be done if the cement work is put in before the stalls are set up. This plan enables the salesman to get orders for stalls to be delivered some time in the future, the cement work not having to wait for the arrival of the stalls—one reason why it is recommended.

We do not give this advice because our stalls cannot be arranged in this way. For years we have furnished anchors to connect our stalls to floors that are already in and which the owner does not feel like tearing out and putting in the stalls the proper way. We can do this for new work too if the purchaser wants it, but it **should not be done if possible to avoid it.**

If necessary to put in the cement before setting up the stalls, the best way will be to make **pockets in the curb** and in the stall floor so the stall posts and the partitions can be set in these pockets and be **lined up** and then be **cemented in.** Fig. 1156 shows how the pockets may be made in the curb by tacking together some thin boards, F, and setting them between the form boards, B, in making the curb. The pockets can be 2½ or 3 inches wide, outside measure, and should be 4 or 5 inches lengthwise, to give room for lining up the posts. It is better to bevel the outside corners, as shown, and one edge **should not be nailed** so the boards may be **pried in** and taken out when the cement hardens. The pockets in the floor for the partitions should be about 6 inches square. The pocket form may be held in place by tacking its upper end to a cleat, C.

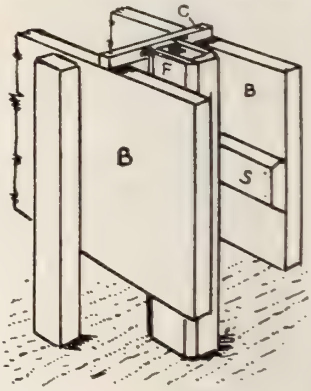
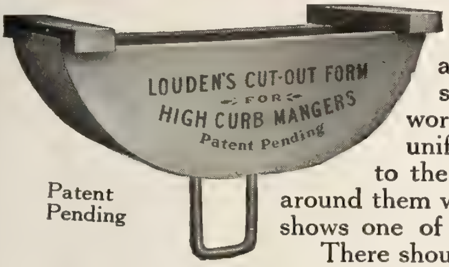


Fig. 1156

Tools and Appliances for Constructing Louden Standardized Mangers



Patent Pending

Fig. 970

Fig. 970 represents the **Louden Cut-Out Form** to make the cut-outs in the Louden High Built-Up Manger Curb. The forms are set in between the boards used in constructing the curb where the stanchions are to be anchored. No cutting of the boards nor extra work of any kind is required to make the cut-outs and they will all be uniform in size and shape. The anchors which connect the stanchions to the curb are easily attached to the forms and the cement being slushed around them will make a better bond than if they were set afterwards. The cut shows one of our large sherardized U bolt anchors connected to the form. There should be 4 to 6 forms for each installment according to the size of the barn and the speed required in doing the work.

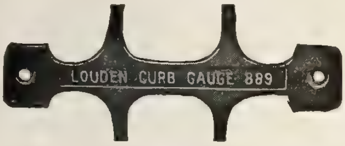
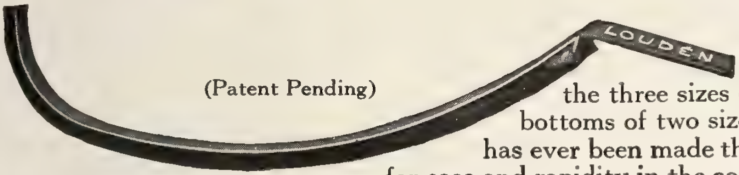


Fig. 1074

Fig. 1074 is a top view of our **Curb Gauge,** by means of which the form-boards for the curb will be held the proper distance apart, and equal distances from the stall posts. No measuring or cutting of boards is required. There should be 8 to 12 gauges for each installment.

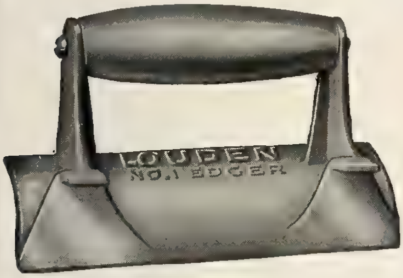


(Patent Pending)

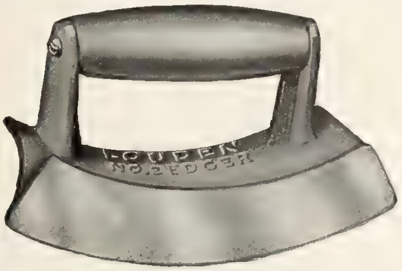
Fig. 1013

Fig. 1013 is a perspective of one of the **Louden Manger Templets.** There are seven different sizes—one for each of the three sizes of concrete mangers and one for each of the bottoms of two sizes of galvanized mangers. No other device has ever been made that will begin to compare with these templets for ease and rapidity in the construction of cement mangers as well as for the excellence of the work. There should be 5 to 8 templets for each installment.

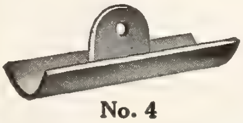
Louden Cement Tools



No. 1



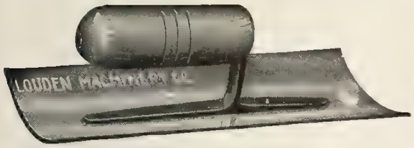
No. 2



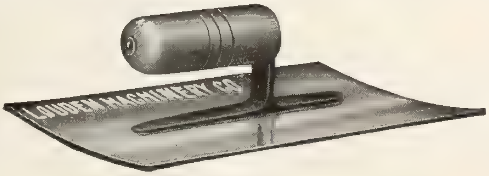
No. 4

No. 1 is our Straight Edger for rounding off the upper edge of the manger curbs, also the sharp edge of the gutter. No. 2 is our Curved Edger for rounding off the edges of the cut-out in the curb and other curved works.

No. 4 is a small tool to **round out and smooth up the corners** between the curbs and the stall floor. Also the corners between the manger and the feed alley floor and any similar corners liable to catch and hold dirt.



No. 5



No. 6

No. 5 is our 4-inch radius Steel Trowel for rounding out and smoothing the corner of the manger next the curb. No. 6 is our 24-inch radius Steel Trowel for smoothing the bottom of the manger. The blades of these trowels are of the finest steel and they are light and easy to handle. No one can afford to be without a supply of these tools in doing the cement work in a dairy barn.

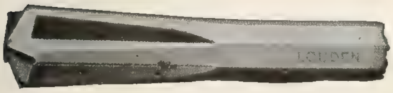


Fig. 1192

Star Drills. For drilling holes in brick, stone or concrete. We carry only the sizes necessary for the anchor shields we use and only in one length. Other sizes and lengths will be furnished on application, at market prices. **Sizes**—½x8 inches, ⅝x8 inches, ¾x8 inches, and ⅞x8 inches.

The Alignment Problem

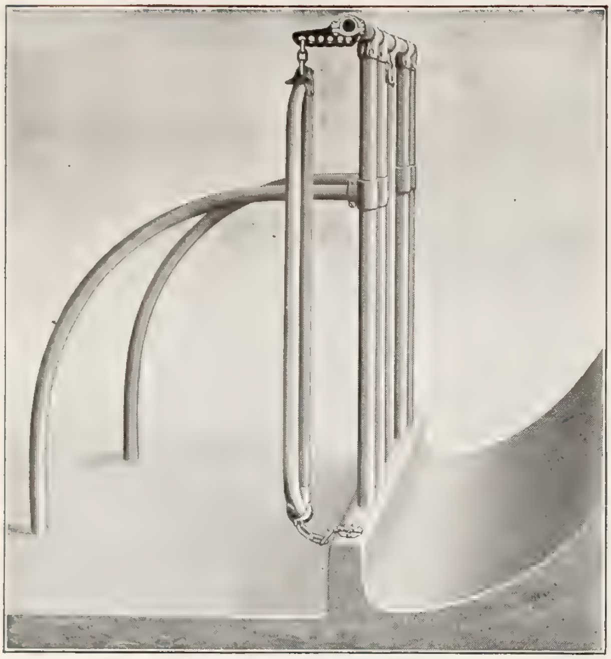


Fig. 938

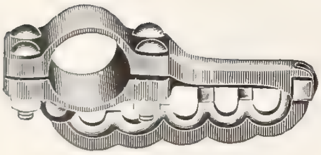
The Louden Adjustable Stalls, as explained on preceding pages, solve the Alignment Problem more completely than anything ever produced, but if other styles of stalls, having either concrete or other non-adjustable mangers should be used, the question arises as to the best way to secure the most practical alignment of the cows on the gutter with these stalls.

In the first place the stall floor should be long enough so the cow can stand with her front feet 6 to 8 inches away from the curb, so she will not jam her knees against it in lying down, and with her hind feet not more than 3 or 4 inches from the edge of the gutter. A good plan will be to measure the distance from out to out of the cow's feet when she is standing in a **natural position,** and then make the length of the stall floor from 9 to 12 inches longer in the clear from the side of the curb to the edge of the gutter.

To provide for different sizes of cows the best way is to make different sections of stalls with different lengths of floors — say, one section with the floor long enough for the longest cows, another for shorter cows, another for those still shorter, and then another for the shortest cows, or for young stock. Different widths of stalls will probably be required, so take it all in all, this will be the very best arrangement that can be made when the barn is large enough for different sections of stalls. When the barn is small, the stall floors can be made longer at one end and shorter at the other, thus tapering the floor, so different lengths will be provided for the different sizes of cows.

Louden "Stanchion Alignment"

(Patented May 26, 1914)



Upper Adjustable Stanchion Holder, Fig. 1298

Another method is the so-called "Stanchion Alignment" by which the stanchion is adjusted backward and forward closer to and farther from the gutter. This method has been largely advertised and is favored by some dairymen. In compliance with the demand for a "Stanchion Alignment" we have designed and patented what we believe to be the best device of the kind on the market, as shown by Fig. 938. The Adjustable Holder secured to the top-rail is arranged so the stanchion may be adjusted as much as 6½ inches to one side of the center of the top-rail. By reversing the holder the stanchion may be placed as far in the opposite direction, thus making a total adjustment of 13 inches. The Adjustable Holder is clamped upon the top-rail by four heavy bolts.

The Alignment Anchor (Fig. 1299) is inserted in the curb when the cement is put in, thus making it as solid as the curb itself. The chain holder is adjustably clamped upon a central rib and has a total adjustment of 8 inches.

There are no bolt head pockets in the curb or any underneath spaces anywhere to catch and hold dirt. These adjustable or alignment anchors are frequently regular "dirt catchers," and do more harm in catching and holding dirt than they do good in the alignment of the cows. Our Stanchion Alignment is free from these faults, and is more practical than any other stanchion alignment made.

Lower Adjustable Stanchion Holder, Fig. 1299

Specifications

Weights. The Louden Adjustable Stanchion Holder with bolts complete weighs 4 lbs. The Louden Adjustable Anchor complete with bolts, 1¾ lbs.

Note: Be sure to specify size of top-rail. Sometimes the Adjustable Anchor is not used and for that reason we price the Holder and Anchor separately.

Louden Step-Back

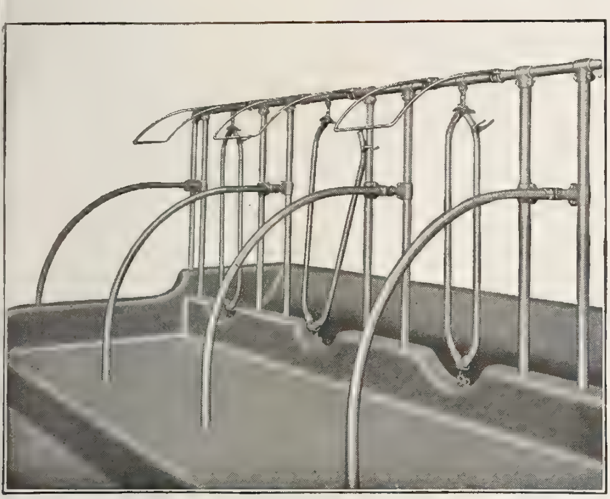


Fig. 1151
Patent Pending.

Fig. 1151 represents another arrangement to prevent the cow from leaving her droppings on the stall floor. It may be applied to any of our steel stalls. It is simply a large spring wire, $\frac{7}{16}$-inch diameter, bent as shown in the cut, and adjustably clamped upon the top-rail directly above where the cow stands. It is adjusted so the lower end will be from 1 to 2 inches above the cow's back when she is standing in a natural position, and immediately behind her shoulders.

When the cow humps her back before evacuating, she will strike it against the wire and this will cause her to step back, so she will deposit her droppings in the gutter. Those who have used this device say it is just the thing and that it is so effective that after it has been used awhile the cow will **form a habit** of stepping back, when the device may be removed without changing the habit. It is a simple, inexpensive device and is certainly worthy of a trial.

This Step-Back is especially adapted for stalls where the floor is a little long and when it is used the floor may be made 4 or 5 inches longer than the standard length thus giving the cow more room. The cut shows three of our Fig. 812 Stalls each fitted with a Step-Back. The Louden Step-Back is made for 1⅝ and 1⅞ O. D. top-rail, and with clamps complete weighs 4½ lbs. Note: Be sure to specify the size of the top-rail.

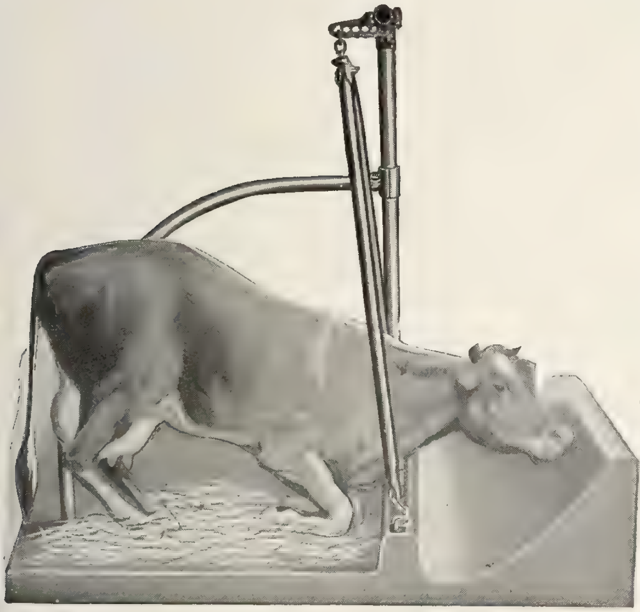


Fig. 940

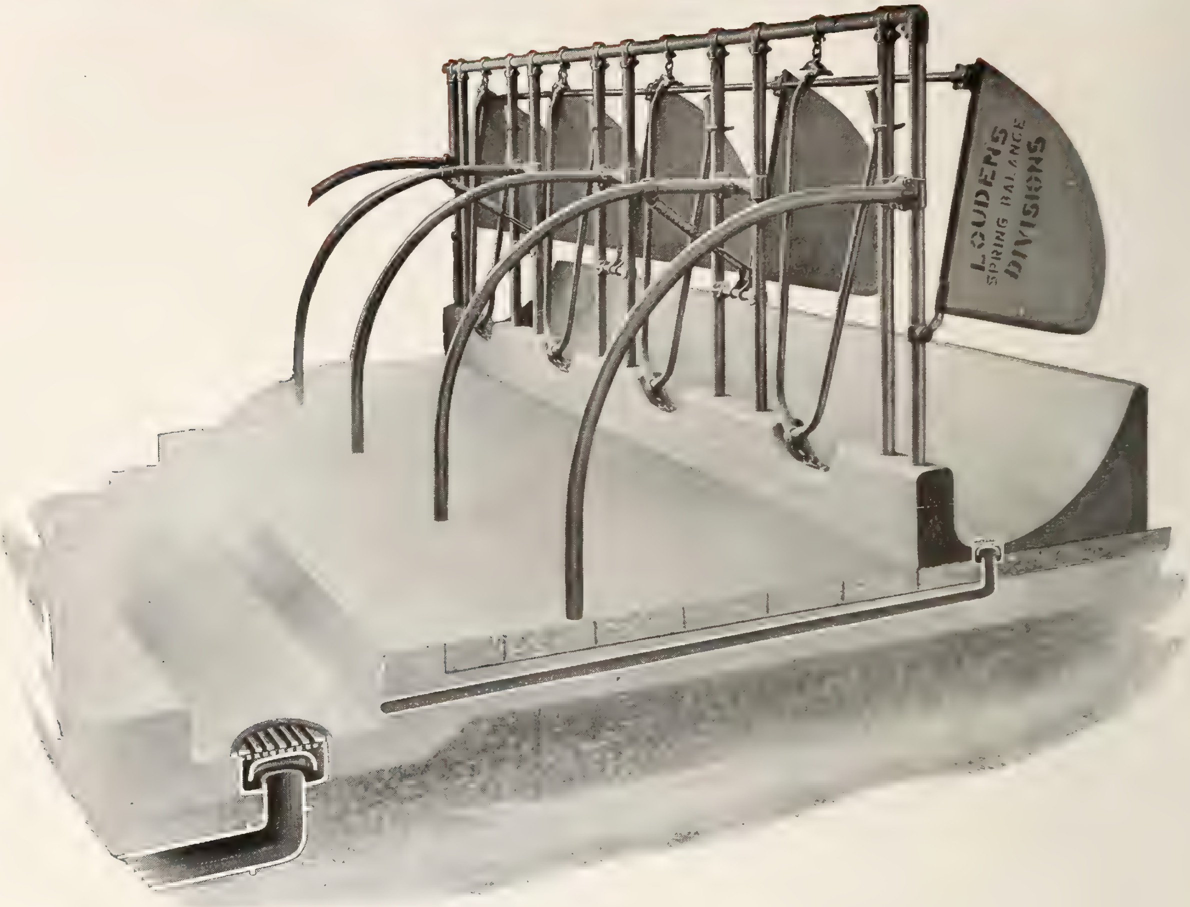
Fig. 940 shows the position a cow assumes when getting up or lying down. She lowers her front end first in lying down and raises it last in getting up. She invariably **pitches forward** in either getting up or lying down—therefore, the necessity for having the stanchion **flexibly anchored** so it will swing enough to prevent jamming her shoulders.

The cut also shows why the cow does not have to strain or jam her knees against the curb to get her feed in our Standardized Mangers as she has to do with flat-bottomed mangers. The feed **rolls down toward the cow** and if any should remain on the far side she will not have to strain to get it. The cut shows the feed-wasting, low-level curb. It should have our High Built-Up Curb to make it complete.

How to Securely Clamp Metal Parts Together

1. Put all the clamps on **loosely** so the parts can be **easily racked** to line them up properly.
2. After they are all in proper position draw the nuts up tight with a wrench.
3. When tightly drawn, **hit the heads of the bolts heavily with a hammer to set them.**
4. Tighten up the nuts **again** with a wrench **as much** as can be safely done.

When treated this way the bolts will not be liable to get loose but without hammering their heads so as to **solidly set them** they will be liable to work loose under a strain and especially so under a jar. This is important in attaching clamps of any kind, especially splice clamps for overhead track, couplings and clamps for connecting the tubing of animal stalls and pens together, especially pens to hold vicious bulls and for other purposes requiring solidity and durability of structure.



Louden Manger and Gutter Drains

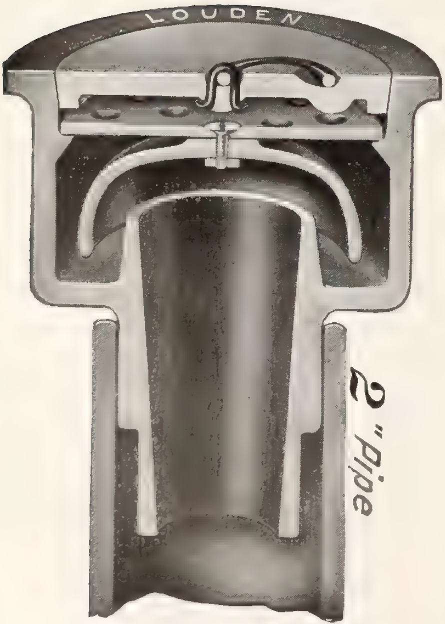


Fig. 1272

Specifications

Manger Drains are 4½ inches wide at top, and 4¾ inches deep, with outlet to fit either 1½-inch or 2-inch pipe, also 4-inch Cast Iron Soil Pipe or Sewer Tile, and are furnished with bell trap strainer and brass cover.
Weight, 5¼ pounds.
Gutter or Floor Drains are 8 inches wide at top and 7 inches deep with outlet to fit either a 4-inch Cast Iron Soil Pipe, or Sewer Tile, and are furnished with bell trap strainer, grating, and with or without brass cover.
Weight, 21 pounds.
Gutter Drain is always furnished with brass cover unless otherwise specified.

NOTE: For other types of Drains and Cess Pools, see page 212.

Proper drainage of the barn is second in importance only to proper lighting and ventilation. In many barns the drainage is so poor that it offsets to a great extent the advantages of proper ventilation facilities.

In addition to the sanitary advantages of proper drainage, the saving of the liquid manure makes the system an economy. Land to which liquid manure is applied will very shortly return in increased crops the entire cost of the installation.

Illustration shows an excellent method of barn drainage. In the gutter at the left of the picture is a cross section of our floor, or gutter drain.

As can be seen in the illustrations, on this and on the next page, both the gutter drains and the manger drains are

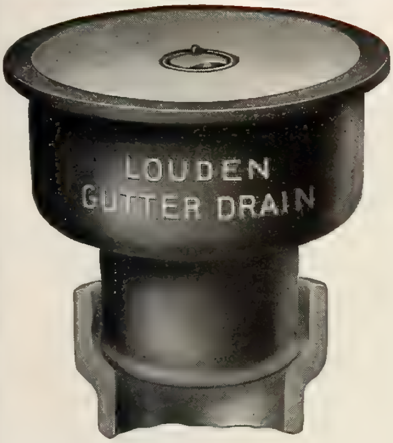


Fig. 1271
Gutter Drain fitted to 4-inch Tile or Soil Pipe

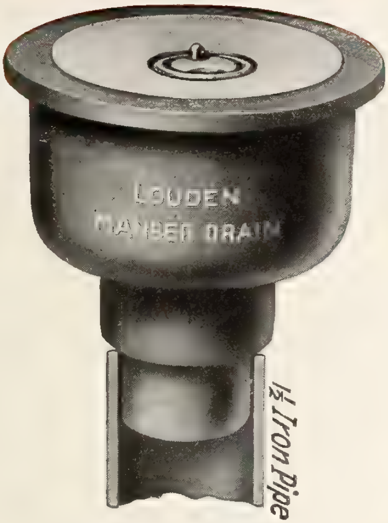


Fig. 1270
Manger Drain in 1½-inch Pipe

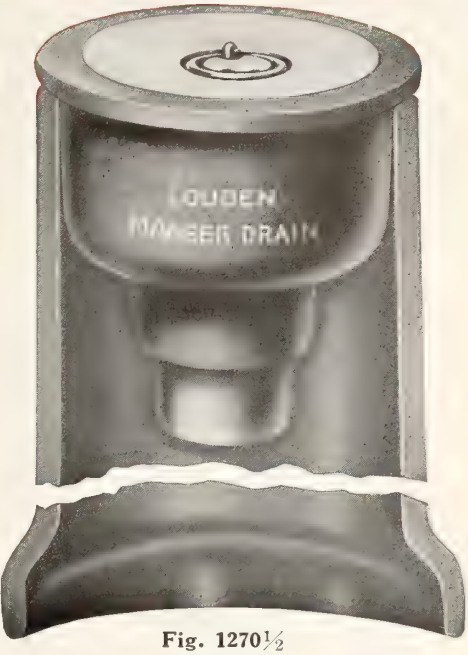


Fig. 1270½
Manger Drain fitted to 4-inch Drain Tile

equipped with bell trap so that no odors or gases can escape into the barn. Each is equipped with strainers which are a part of the bell trap. This prevents trash entering and clogging up the drain pipes.

Drains are made of cast iron throughout with the exception of the close-fitting, water-tight brass lid.

The brass lids have a perfectly milled seat, the same as found on valves of automobiles and gasoline engines, which are recognized standard. The lids, while easily removed, close the opening air tight by their own weight.

The lifting rings on the brass lids are counter sunk, so there is no danger of the lid being displaced by the animals stepping on it, or rooting with the nose. While fitting snugly, the lifting ring is so arranged that lid can be removed instantly with the fingers, no tools being required.

Manger Drain Installation

Figures 1270 and 1270½ show how Louden Manger Drains fit different sizes of drain pipe. The manger drain pipe should never be less than 1½-inch pipe, and our drain heads will fit that size; also a 2-inch pipe or 4-inch soil pipe or tile. Illustration shows how far below the manger floor level the drain pipe may rise to allow for proper installation.

The advantage of having a drain for the mangers is great. With the drain closed with the close-fitting cap, the animals may be watered conveniently, and the mangers scrubbed out as often as desired.

Gutter Drain Installation

Louden Gutter Drains are made to fit either a 4-inch Cast Soil Pipe or Sewer tile. Illustration shows proper installation. The inside wall of the Drain is 4 inches in diameter, the same as the 4-inch inside of the drain tile. Set the flange end of tile next to floor and Drain when set in it with cement will be absolutely rigid. Every barn should have a drainage system that will make it possible to save every bit of the liquid manure. Different conditions in the barn surroundings will make the installation of a liquid manure system a matter of personal choice, but the main point—save the liquids—can not be too strongly urged.

It is an easy matter to arrange cocks at the cistern so that the water from the mangers need not enter the cistern, but be carried to other places.

Let Our Experts Help You

We have a large corps of men who are experts on barn construction, barn arrangement, ventilation, drainage, and kindred subjects. These experts are at your service and advice is free. If you are going to build or remodel your barn do not hesitate to write us. Our suggestions may save you many dollars.

Louden Simplex Water Bowl

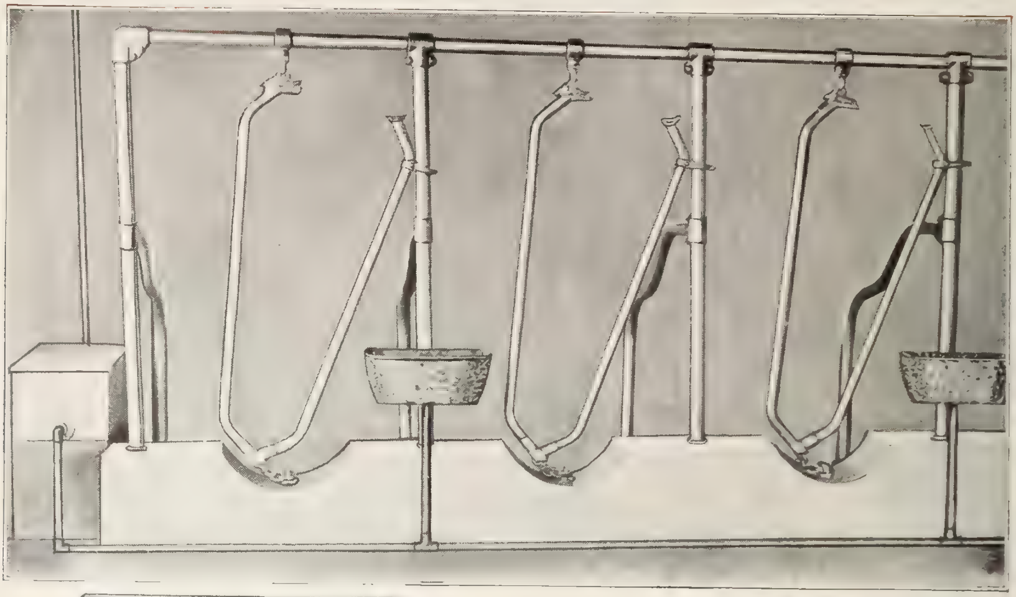


Fig. 1115

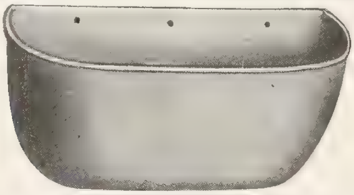


Fig. 1116

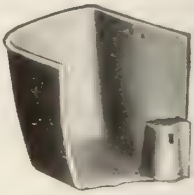


Fig. 1117

In choosing a watering system for your barn there are several things to be considered such as:

1st. **Simplicity** and **Louden's Simplex** has less working parts than any other water bowl, as from its construction it does not require trap, valve, spring, or anything else that can get out of order. The bowl is screwed on the top of a piece of water pipe and then fastened to the stall, whether that be of wood or steel pipe and can be fastened to any style of stall or partition. The regulating tank is a galvanized steel tank with a common ball cock which shuts off the water when there is enough in the bowl.

2nd. **Ease of Installation.** There are no complicated joints or unions to be used. The bowl being tapped with a standard pipe thread, simply screw it on the upright ¾ inch pipe. As all other connections are ordinary water pipe fittings any one who can handle a pipe wrench can make the installation once the pipes are cut and threaded.

3rd. **Cleanliness.** These are as sanitary as any uncovered bowl can be. Fig. 1117 shows the construction of the bowl. You will notice that the water enters the bowl about two inches from the bottom, consequently, no dirt or other refuse can be sucked down into the pipe as so often occurs when the water enters from the bottom. As the water enters the bowl a short distance from the bottom any sediment which collects will not be stirred up and mixed with the water that the cow drinks, but will sink to the bottom and can be easily cleaned out by the hand without taking the bowl to pieces.

4th. **Cheapness.** These bowls are large, and if placed between two stalls they are large enough to accommodate two animals, thus doing the work of two ordinary bowls, and owing to their extreme simplicity of construction the cost in producing them is considerably less. This water bowl has been thoroughly tested and we do not know of one job that is not giving entire satisfaction because they can not get out of order and as there are no fine parts connected with them they will stand more cold without freezing than any other bowl made.

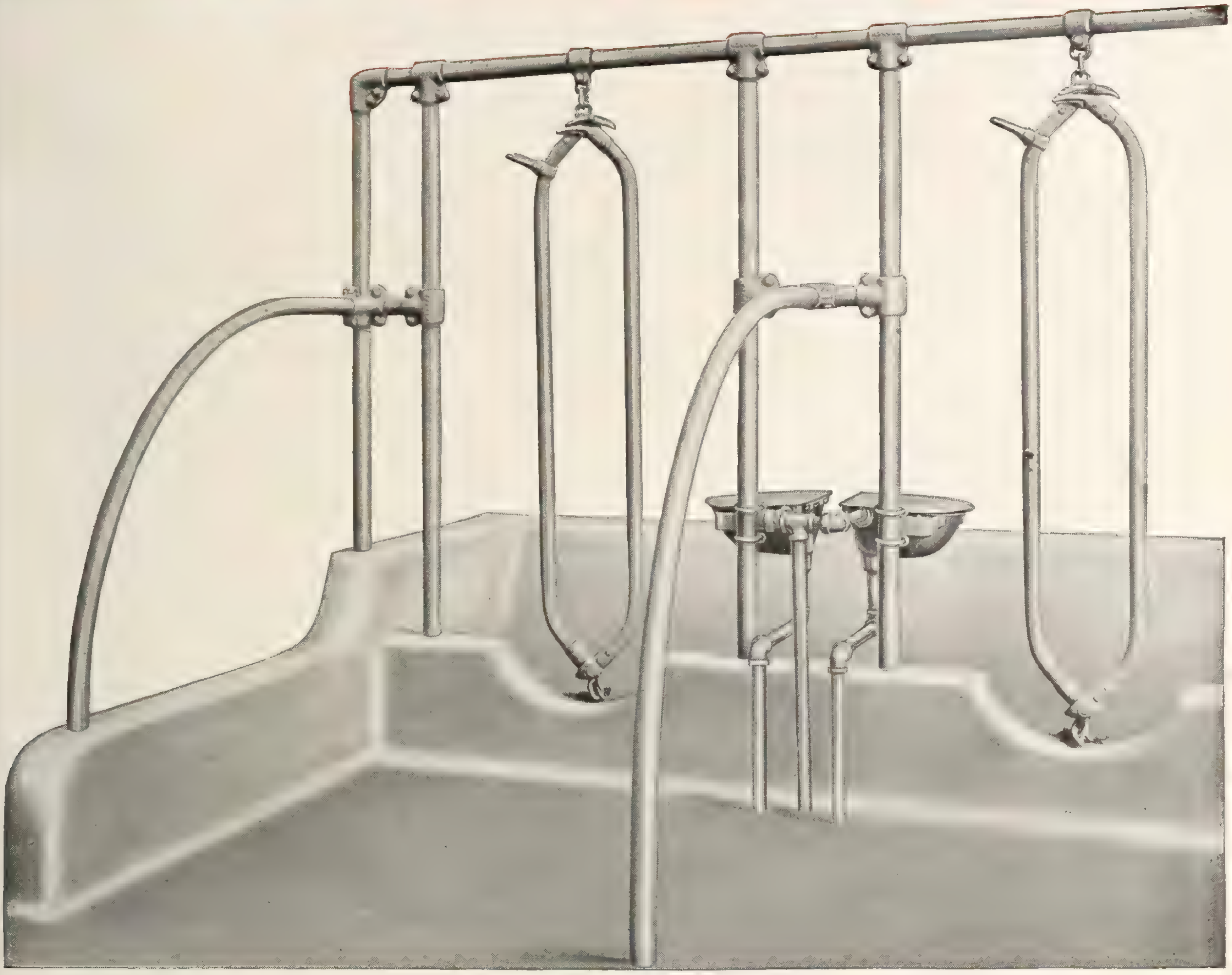
Fig. **1116** shows the shape of the bowl and fitted for fastening to a wood stall or partition.

Fig. **1115** shows the bowl fastened to our 796 stall and also the position of the regulating tank.

Fig. **1117** is the inside construction showing one of the in-take places and there is also another on the opposite side.

If you want a watering system that is easily installed and will not get out of order and also one that will be medium priced you will make no mistake in installing this one.

The best recommend we can give them is that there are thousands of them now in use and every one giving satisfaction.



Louden Sanitary Automatic Drinking Bowls—Fig. 1274

Specifications

Right and Left Hand Bowls

The Bowls are made right and left hand. The Right Hand Bowl is the one a cow must turn her head to the right to operate. The cow must turn her head to the left to operate a Left Hand Bowl. The Bowls can be placed in pairs between every other stall when a double post stall is used as in Fig. 1274. When Bowls are attached to single post stalls, all the bowls in any one row must be either Right or Left hand, and placed one at each stall instead of in pairs as in Fig. 1274.

No inlet or drain pipes are furnished. All pipes and fittings are stock sizes that may be secured from any plumber.

Operation: Cow lifts lid with her nose when she drinks, automatically opening the supply pipe, thus admitting water to the bowl. The water is entering constantly as she drinks. When she finishes drinking the weight of lid dropping back into place closes supply pipe, and automatically opens drain, permitting all water to run out. Bowl has overflow connection with drain so that if water enters faster than the cow drinks, it will not run over on the floor.

Construction: Heavy malleable iron bowl with steel lid. All parts rounded edges. Sanitary construction throughout. Made to use with ¾-inch supply pipe.

Capacity: Each bowl is so regulated that it holds about two quarts while cow is drinking. Entire capacity about 5 quarts.

Dimensions: (Outside of bowl) 8½x9½ by 4½ inches deep.

Finish: Painted or galvanized as specified.

Weight: One bowl complete with connections, 13¼ pounds.

NOTE: In warm climates or in barns where there is no danger of freezing it may be desired to run water supply pipe, parallel with stall top rail instead of under floor as is recommended. With this plan a supply of our Parallel Clamps should be ordered with the Bowls. There are four sizes of clamps. Be sure and give outside diameter of your stall top-rail and we will send Clamps to fit.

Points of Superiority in Louden Sanitary Automatic Water Bowls

It is the only really sanitary watering system. It is strictly individual. No cow ever comes in contact with water from which another cow drinks.

Each bowl has a separate inlet, connected directly to the main supply pipe, and a separate drain, connected with the main sewer. The refuse water does not run from one bowl to another.

The cow waters herself. She has clear, fresh water, of the right temperature, always before her.

Water does not stand in the bowl. When the cow drops the lid all refuse water drains off.

There is only enough water in the bowl at one time to permit the cow to drink comfortably. Very little water is wasted.

The bowl is shaped to fit the cow's nose. There are no corners to catch dirt. It is easily kept clean.

The close-fitting lid keeps out all impurities. Rubber bumpers on each side of the bowl deaden the sound of the dropping lid.

The Louden Automatic Water Bowl System will save you valuable time. It will keep your cows in better condition and increase their milk yield.

It will begin paying for itself the day you put it in your barn.

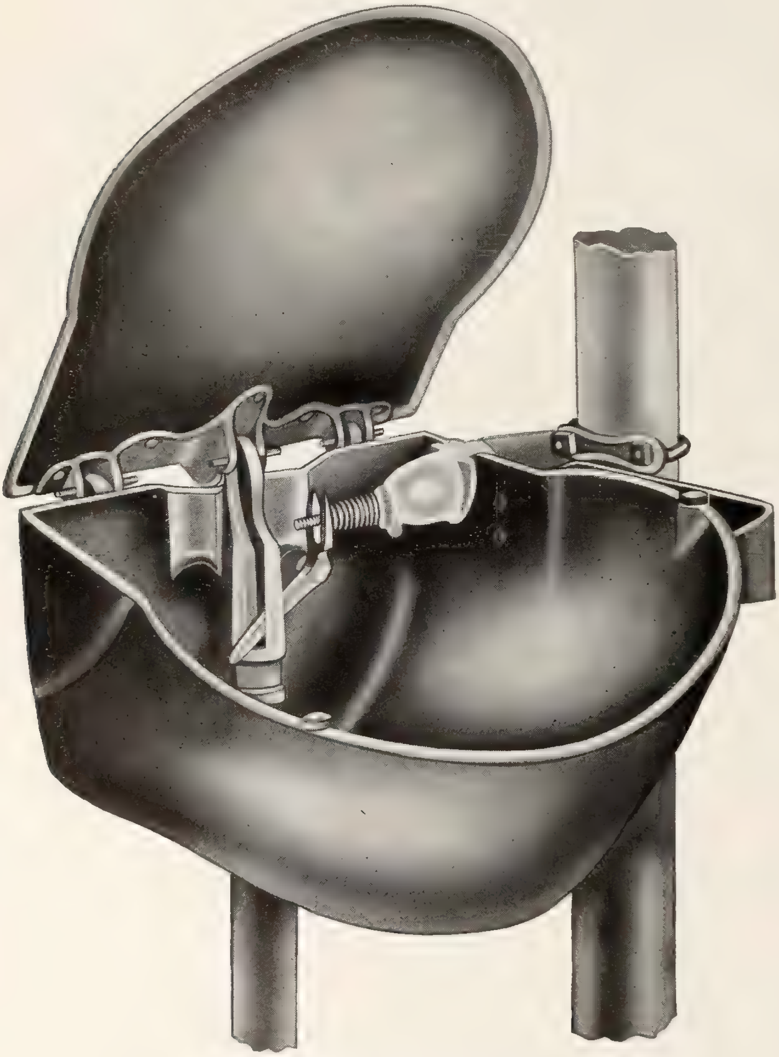


Fig. 1294—Inside View showing Simple Mechanism of Bowl. It's always in "working order."

With the Louden Automatic Watering System the cow drinks as much as she likes as often as she desires, without any attention or labor upon the part of the attendants. There is very little wasted water and it is always pure and fresh.

With the ordinary watering system, water stands in the bowls till the cow is ready to drink—sometimes for hours—gathering impurities and becoming stale. With our Automatic Bowls no water is in

Louden Automatic Water Bowls—Continued

bowl except when the cow is drinking. Fresh water is admitted by the cow raising the lid of the bowl (as she will readily learn to do). This automatically opens the water valve, at the same time closing the drain. When the cow finishes drinking the lid drops into place, closing the water valve and opening the drain, so that the water will all run out through the drain pipe.

Louden Sanitary Water Bowls are individual which is the only safe way to prevent a diseased cow from infecting her neighbor, and while they may be placed singly, it is preferable to arrange them in pairs as shown in Figure 1274, one on each side of every other manger division, when divisions are used, which they should be. The bowls are made right and left to suit this arrangement, saving considerable in piping.

The bowls have no sharp corners anywhere to catch and hold dirt or to injure the cows. They are compactly built and arranged to occupy but little room, the top of the bowls being about 24 inches above the stall floor, which is the most convenient and natural location for the cow.

The bottom of the bowl is made rounding to fit the cow's nose, thus requiring the very smallest amount of water to enable her to drink. The outer edge of the bowl is fitted with two rubber bumpers which makes the dropping of the lid noiseless. By this means the cows are not induced to play with the lids. When the bowl is full the water will overflow through the drainage plug.

Every imaginable point has been looked after in the construction of these water bowls and we have decidedly the best ever made. The principle is correct and the construction is right.

Louden Sanitary Water Bowls are secured to the stall posts by means of brackets riveted to the sides of the bowls. These brackets are secured to the posts by clips. The brackets have an adjustment of several inches to suit posts set different widths apart, and may be connected to the posts of any of our stalls.

Bowls may be attached in pairs to single post stalls if necessary, but we do not recommend such an arrangement. They should be attached singly. Fittings for attaching two bowls to a single post are charged extra.

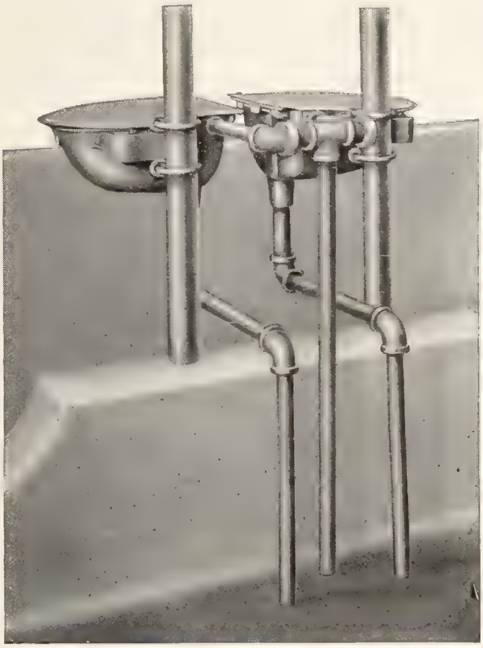


Fig. 1274-A
When the cow drinks she pushes back the lid of the bowl, automatically opening the supply pipe. When she finishes drinking, the lid drops back into place, closing supply pipe and opening drain.

Installation

The water for the bowls may be drawn from a supply pipe laid in the cement in front of the cow's feet or pipe may be attached to and parallel with the top rail. We are prepared to furnish parallel clamps for this method, but recommend the other plan.

Where this watering system is to be installed at the time of new floor and manger construction, the curb and manger is made first, according to our directions, and the water bowls and pipes for same are put in place before putting in the stall floor. The supply pipe may either be on the ground below the cement or it may be placed near the top of the floor. If the cement is already in, a groove may be cut in the floor and the supply pipe laid in it so it will only be covered with the fresh cement used to fill the groove. Many of our customers, when putting in a concrete floor have found it desirable to lay a 4x4 where the pipes are to go in. This timber can be removed whenever it is desired to lay the pipes—whether it is in six days or six months.

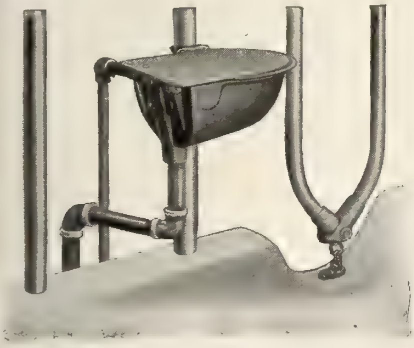
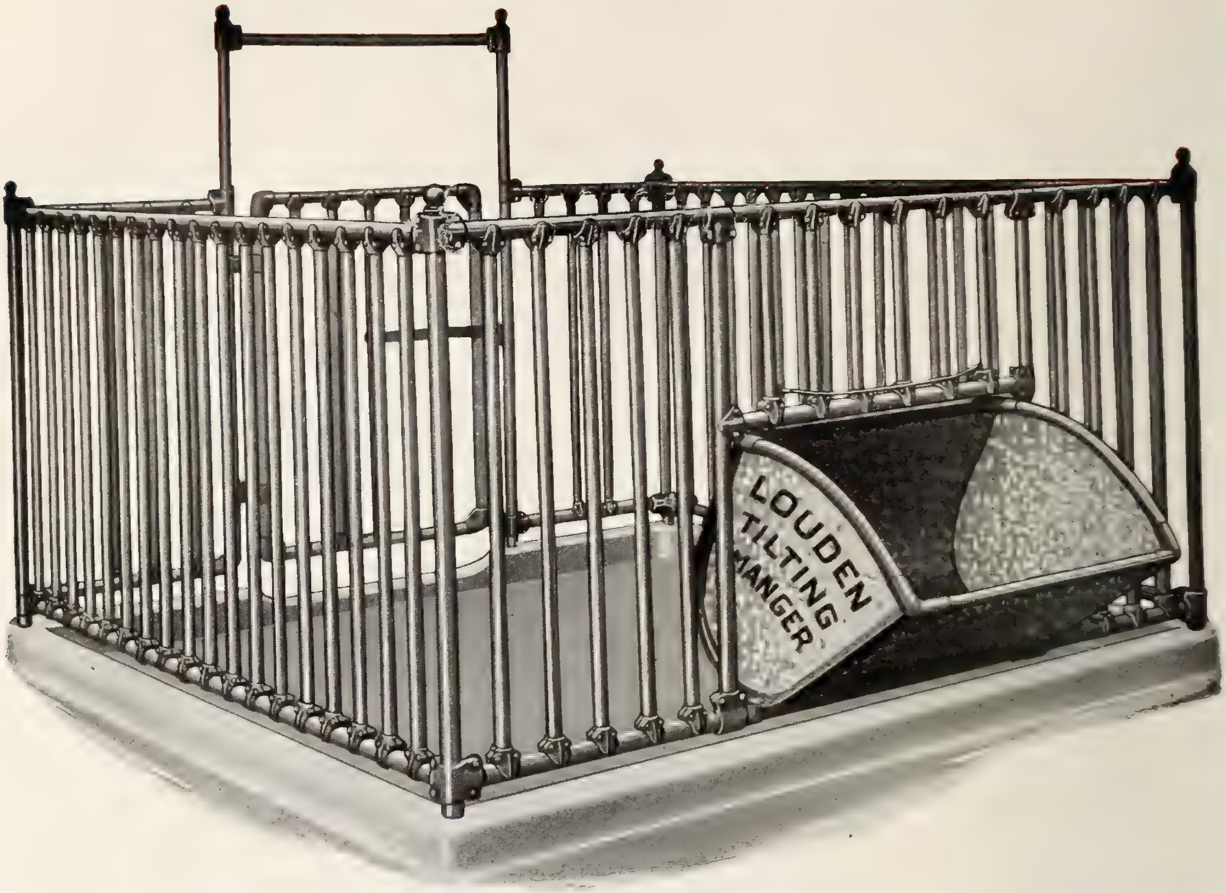


Fig. 1274-B
Single Bowls can be furnished for either right or left side of stall.

When cork brick or creosoted blocks are used it is best to place the supply pipe immediately below them. Located in this position the supply pipe may be readily taken up and replaced if this should ever be necessary. By placing the supply pipe under the floor the water will be kept cooler in hot weather and will not be so liable to freeze in cold weather.



Louden Maternity Pen, Panel Construction—Fig. 996

Specifications

Size of Tubing. The corner and gate posts, the posts and rails adjoining the manger and the top and bottom rails (when the latter is used), as well as the gate frame, are 1⅝ O. D. steel tubing. All the fillers, including those for the gate, are $1\frac{1}{16}$ steel tubing.

Length of Tubing. All the posts are set 5 inches in the concrete below the level of the floor. The corner posts are 5 feet long; the gate post 6 feet 9 inches long. The length of the main fillers for the curb construction is 57 inches, and for the panel construction, 44 inches. The fillers above the manger, 15½ inches. The standard height of panel is 54 inches above the floor. The gate is 40 inches wide in the clear.

Connections. The horizontal rails are connected to the corner posts by our Corner Couplings, N-6, Plate 15. The horizontal rails are connected to the gate posts and the manger posts by our Interlocking Dust-Proof Couplings, Fig. 933. The fillers are set approximately 5 inches apart on centers and are connected to the horizontal rails with our Grip Clamps, Fig. 1150.

Dimensions of Manger. The Manger is 36 inches long and 28 inches wide at the top and 28 inches deep. The bottom is rounded on a radius of 9 inches. It is made of 18-gauge galvanized sheet steel, reinforced by steel angles on the ends and outside, and by a slotted $1\frac{5}{16}$ O. D. tube on the inside next the cow.

Other Features. The pen may be placed against a wall or in a corner of the building so the wall or walls will form one or two sides of the pen. A 4-inch concrete curb should be built under the panel to prevent bedding from being pushed out of the pen. The corner and gate posts are fitted with ornamental knobs.

Weights. Sides of pen, curb construction, per lineal foot, 22 lbs.; same, panel construction, 21 lbs.; Manger panel, with lower, rail 47½ lbs. Gate, with hinges and latch, 84 lbs. Arch-rail and gate posts above panel, 40 lbs. Manger crated, 95 lbs.

Eau Claire, Wis. Dec. 13, 1915
The Louden Machinery Co.,
St. Paul, Minn.
Gentlemen:

Your goods were satisfactory in every way and you can feel free to refer any prospective buyer to me for an indorsement of your barn equipment.

Very truly yours, Dr. E. L. Mason.

Manger Handles

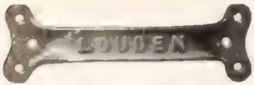
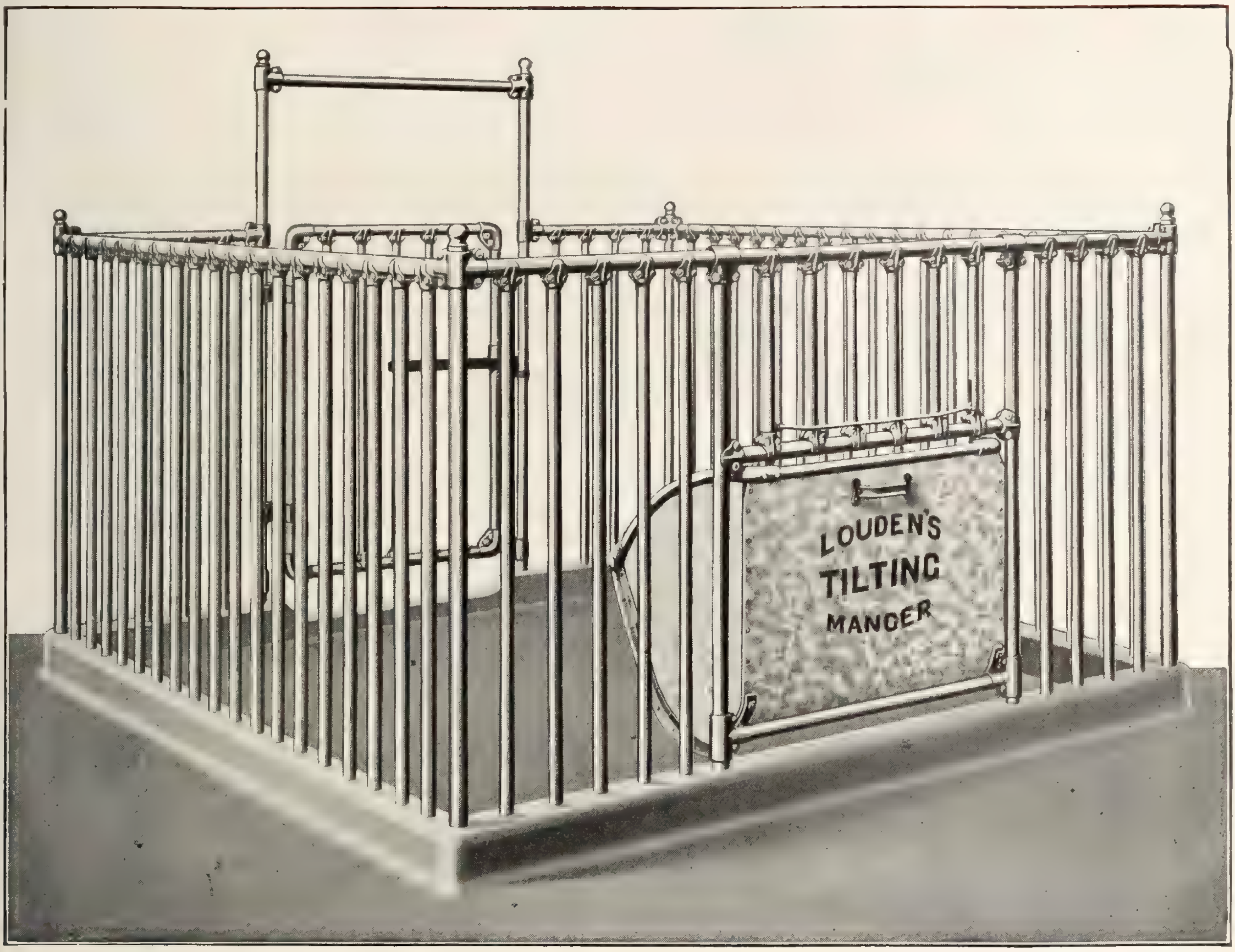


Fig. 1195

Fig. 1196

Fig. 1195 is our Malleable Iron Manger Handle and Fig. 1196 is a Handle made of $1\frac{5}{16}$ O. D. tubing These handles are large and strong and are suitable for many purposes.



Louden Maternity Pen, Curb Construction—Fig. 995

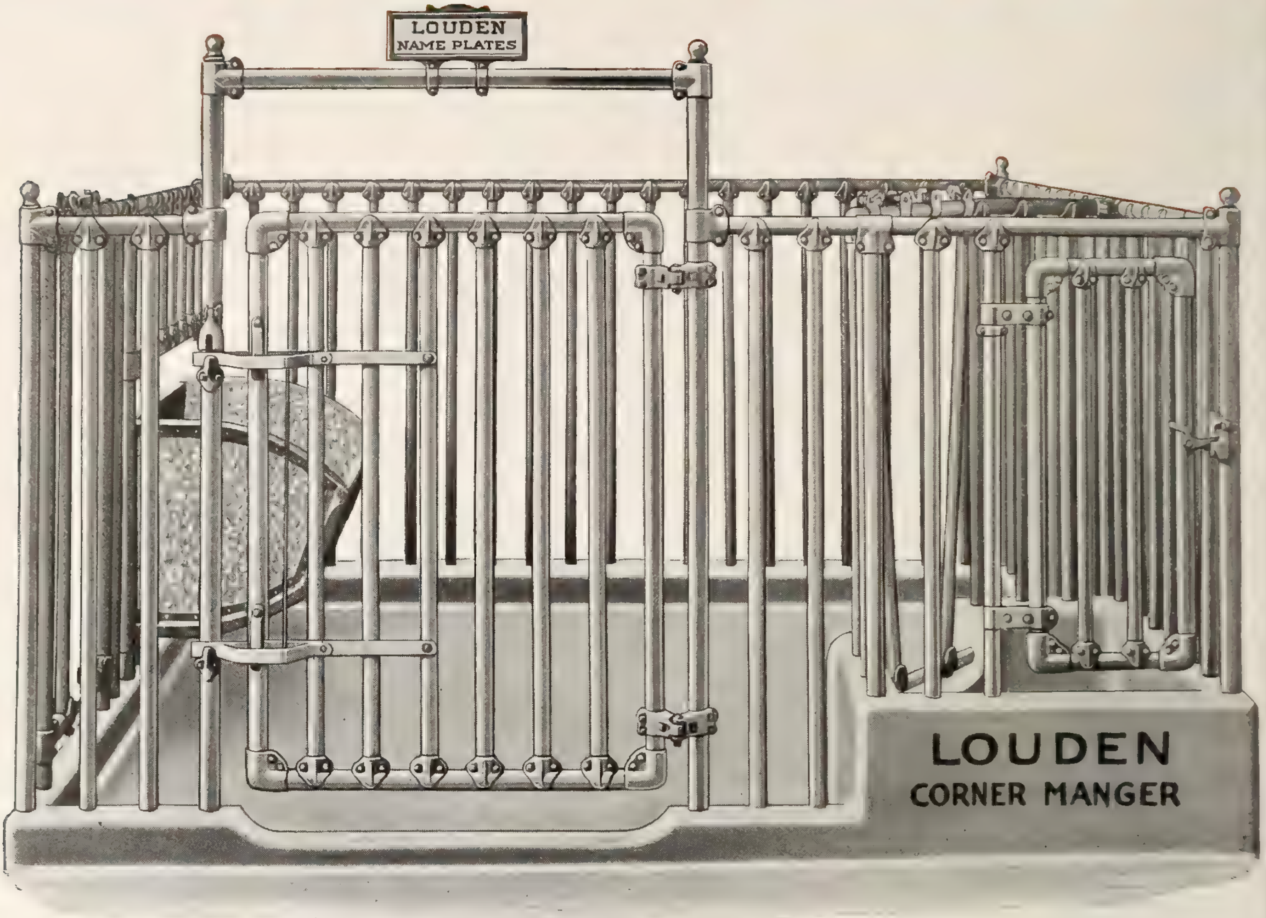
Many cows have been injured and calves lost for the lack of suitable quarters in calving. The Louden Maternity Pen has been designed to supply this want and to save this loss to the dairy farmer. That it "fills the bill" in the most satisfactory manner is the verdict of all who have used it. It is so simple and will be so easily understood that any extended description is hardly necessary.

Suffice to say that it is composed of tubular steel uprights with corner posts set in a concrete curb and held at the upper ends on a tubular steel top-rail by means of our dust-proof malleable iron connections. It is provided with a **tubular steel gate** hung to the gate post by our **adjustable center pivot hinges,** and is held in closed position by one of our **safety hold-shut latches,** elsewhere described. The gate posts are extended above the top of the pen and are connected together by a tubular steel arch-rail.

It is also provided with a galvanized feed manger set on a pivot so it can be tilted in for feeding and tilted out for filling or cleaning, being held in either position by drop-pins mounted in the frame of the pen above the manger. By lifting these drop-pins the manger may be tilted out until it rests on the floor, where it will be easily washed or disinfected. The upper edge of the manger next the cow is bound with a slotted tube to make a round edge and thus avoid sharp corners to injure the cow's neck.

The Louden Maternity Pen may be constructed in two ways. 1st, by inserting the fillers as well as the posts in the concrete curb as shown by Fig. 995; and 2d, by connecting them to a bottom rail, as shown by Fig. 996. The former is much the best way as well as cheaper. It is considerably stronger and is more easily kept clean.

Two or more Louden Maternity Pens are a necessity in any dairy barn. They are ideal as hospitals during sickness in the herd. Besides, there is a **simple artistic beauty** about the Louden pens that helps to set off the appearance of the stock to the best advantage. Many breeders say they are a good investment for this feature alone.



Louden Tubular Steel Bull Pen—Fig. 1164

Specifications

Size of Tubing. The side bars of the rigid stanchion are 1⅞ O. D., and the fillers of the manger gate are $1\frac{5}{16}$ O. D. All of the rest of the steel tubing used in the bull pen is 1⅝ O. D.

Length of Tubing. The height of the pen above the floor is 5 feet 3 inches. The tubing goes 9 inches into the cement (5 inches in the curb and 4 inches into the floor) making all the posts and main fillers 5 feet 5 inches long, except the large gate posts which are 6 feet 9 inches long.

Size of Gates. The standard size of the Main Gate is 56 inches high and 41 inches wide, out to out. The gate opening is 4 feet wide, center to center of gate posts. The manger gate (or feed gate, as it is sometimes called), is 41 inches high and 16½ inches wide, out to out.

Connections. The top-rails including the curved top-rail of the manger, are connected to the corner posts by our corner couplings(see N-6, Plate 15, page 136). The top-rails are connected to the large gate posts by our Interlocking Dust-Proof Couplings (Fig. 933). The fillers are set approximately 6 inches apart and are connected to the top-rails by our Grip Clamps, Fig. 1150.

Size of Pens. The pens should be 10 to 12 feet square to give the bull sufficient freedom. It may be built against the wall or in a corner of the building in which case one or two of the sides will not be required, but wall flanges will be needed to join the top-rails to the wall.

Size of Mangers. The size of the Corner Manger has already been given. The size of the Tilting Manger is 39 inches long, 36 inches deep on the outside and 30 inches wide. It tilts into the pen 25 inches and out into the alley 22 inches. The stanchion bar can be adjusted wide enough apart for the largest bull and close enough together to hold a calf.

Approximate Weights. The material for the sides of the pen weighs 29½ lbs. per foot. The standard size of gate with posts and arch rail, and the hinges and latches complete, weighs 177 lbs. The gate, with latches only, weighs 118 lbs. The tubing and fittings for the corner manger with stanchion complete weighs from 123½ to 126 lbs., according to size. The tilting manger, crated, weighs 159 lbs.

"A bull in a china shop" is not more to be dreaded than a bull "broke loose" in the barn yard. His giant strength will be sure to manifest itself in a way that will not be pleasant and may be dangerous. No matter how gentle a bull may seem you never can tell what may happen to arouse him to deeds of violence. Therefore, it is not safe to take chances in using a stanchion to hold a bull the same as a cow. **A Louden Bull Pen should be used.**

Louden Tubular Steel Bull Pen — Continued

In the Louden Bull Pen, "safety is first"— safety for the herd, safety for the bull and safety for human life. In its construction the best quality of heavy steel tubing is used—the lower ends set firmly in solid cement and the upper ends held securely together by the Louden Malleable Iron Connections described in this catalog. It is provided with a heavy bull-proof gate made of the same material and held shut by a pair of bull-proof latches, both of which have to be lifted out of the catches before the gate will open.

Fig. 1164 represents a Louden Bull Pen fitted with **two mangers**—a **tilting manger** made of wood with galvanized steel ends and the **Louden Corner Manger** made of concrete protected by bars of tubular steel. It will be understood, of course, that two mangers are not to be used at the same time, and the two are shown here to better enable the purchaser to decide which kind to use. The tilting manger is made of 2-inch planks securely held together by heavy steel angles secured to edges of the galvanized steel ends. It is mounted on a pivot bar set in one side of the pen so it may be easily tilted in for feeding, as shown in the cut, or tilted out for filling and cleaning.

The Louden Corner Manger is a new departure and we believe it is the best manger ever devised for a bull pen. It is **all inside** of the pen instead of being mounted in one of the sides where it will be out in the alley a part of the time. There is nothing loose for the bull to play with and keep up an incessant racket. It is stronger and more durable and is more easily kept clean than a wooden manger. It takes less room because it occupies only one of the corners instead of projecting into a central part of the pen.

Louden Bull Pen with Corner Manger

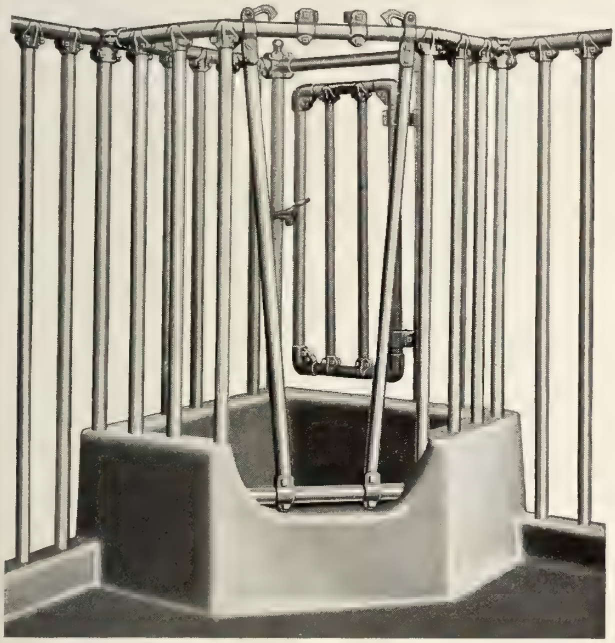


Fig. 1165

Fig. 1165 is an inside view showing the Louden Corner Manger with a Bull Pen Stanchion open to receive the bull's head. It gives an especially good inside view of the manger, showing the high sides with cut-out for lower end of stanchion, the curved top-rail connected to the top-rails of the pen and the vertical railing which encloses the manger to hold hay, and to prevent the bull from getting into the manger with his feet or soiling it. It also shows the smooth rounded corners and the absence of cracks or crevices to catch and hold dirt.

Fig. 1165 also gives a good view of the Louden Bull Pen Stanchion which is used only to hold the bull while cleaning, his head being securely held in the manger while the attendant is in the pen or the gate is open. At all other times the bull should be given the freedom of the pen. With the stanchion in one side of the pen, the bull's head would be out in the alley where he could injure a person who might happen to get too close. This cannot happen with our Corner Manger.

The Louden Bull Pen Stanchion consists of two bars of 1⅞ O. D. tubular steel hinged to clamps on a lower rail having its ends connected to adjacent vertical posts or fillers, as well as embedded in the concrete when the corner manger is used. The upper ends of the stanchion bars are fitted with malleable sleeves which slide on the top-rail, and with latches which engage catches clamped on the top-rail, so as to hold the stanchion bars securely in closed position. The hinges below and the catches above can be **adjusted on the rails** so as to set the stanchion bars wider apart or closer together to suit bulls having different sizes of necks from the largest to the smallest. The latches are protected by guards so it is impossible for the bull to open them with his horns.

The manger gate is placed on the side of the pen next the alley for convenience in placing feed or a bucket of water in the manger, or for cleaning it while the bull is in the pen. The bull can be shut out from the manger by closing the stanchion bars. The latches of the stanchion can be easily reached from the outside of the pen. In every way it is convenient and easily managed. The corner manger also makes the pen stronger, while a tilting manger set in one of the sides tends to make it weaker.

Some one has said that the phrase "Sunny Disposition" was coined by a dairyman who observed the contentment of his bull in a clean, light, well-ventilated **Louden Bull Pen** after seeing another bull in

Bull Pen with Corner Manger — Cont'd

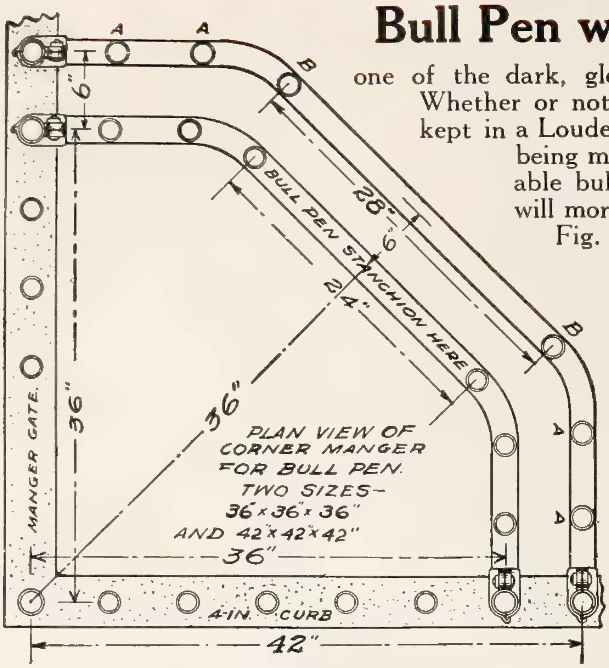


Fig. 1166

one of the dark, gloomy, foul places where bulls are sometimes kept. Whether or not this is correct, no one can doubt the fact that a bull kept in a Louden Pen will be always in the best condition and besides being more contended he will be a healthier and a more profitable bull, and that in addition to this, the element of safety, will more than pay for the pen.

Fig. 1166 is a top or plan view of the Curved Top-Rail used in the Louden Corner Manger. Also, a plan view of the outside curb of the manger, showing the location of the posts and fillers and the manger gate. The cut shows two sizes — 36x36x36 inches for medium and smaller size bulls, and 42x42x42 inches for larger bulls. The bottom of the manger should be 1 to 2 inches above the level of the floor of the pen and should be rounded to leave no sharp corners in the mangers. It should also be provided with means for drainage.

Two Other Types Of Bull Pen Mangers

Fig. 1300 and Fig. 1301 show two popular types of open bull pen mangers. Fig. 1300 shows a low manger built on the outside of the pen, 26 inches wide, 38 inches long, and 30 inches high, from the floor. Size may be varied if desired.

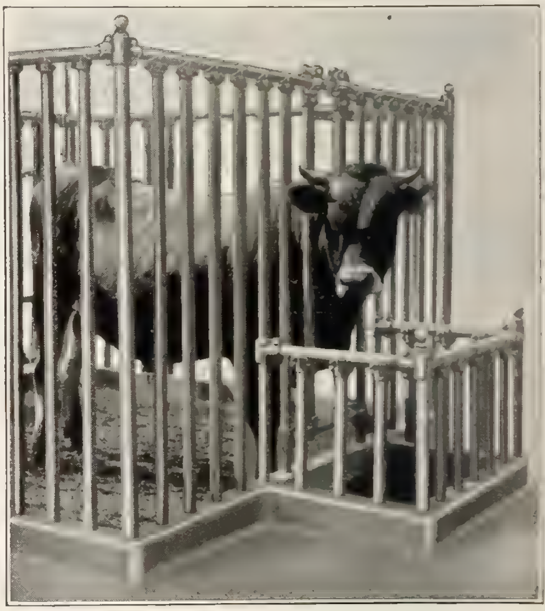


Fig. 1300. Bull Pen with Low Outside Manger

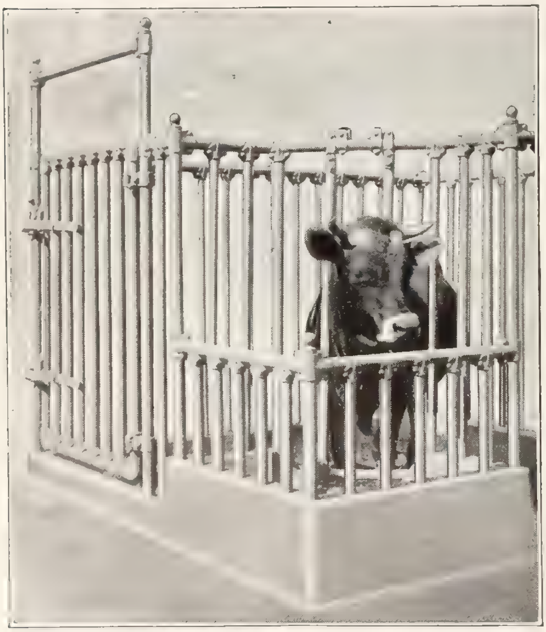


Fig. 1301. Showing Regular Corner Manger with Low Railing Outside

Fig. 1301 shows our regular corner manger with low outside railing. All measurement are the same as for regular corner manger except height of outside railing, which is 30 inches high from the floor.

Either of these mangers is suitable for a gentle bull, but for a vicious animal the completely enclosed manger is safest.

The open manger gives the animal a little more freedom, is more easily filled, and is cheaper than the enclosed type.

Our regular bull stanchion is used in both the mangers shown.

Louden Tubular Steel Gates

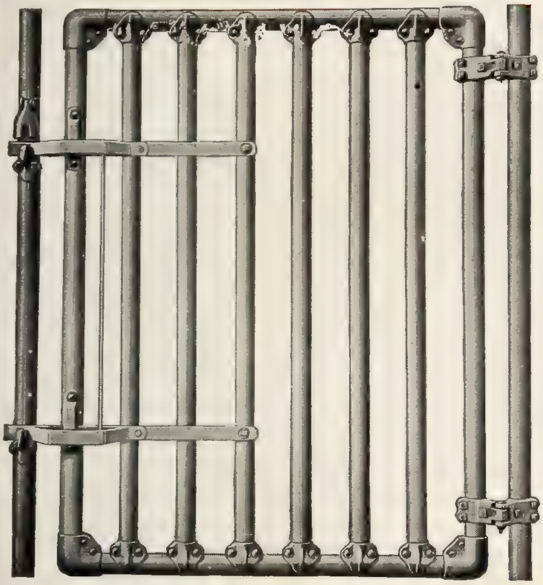


Fig. 1169

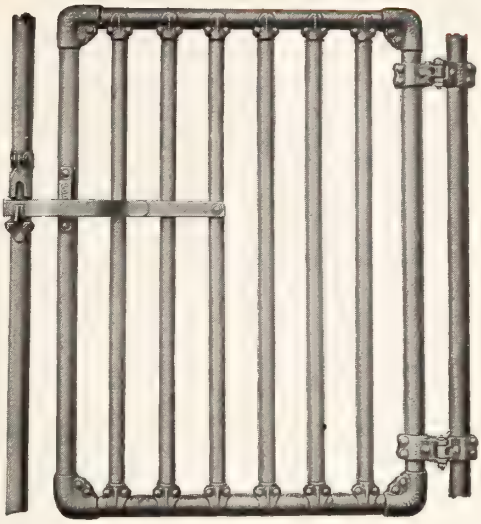


Fig. 1170

Fig. 1169 is the Louden Heavy Tubular Steel Gate with patent Adjustable Center Pivot Hinges and heavy Hold-Shut Twin Latches, suitable for bull pens and other places requiring great strength. Fig. 1170 is the Louden Standard Tubular Steel Gate with Adjustable Center Pivot Hinges and a Single Hold-Shut Latch, suitable for maternity pens, calf pens and similar uses. These gates are made of the best quality of steel tubing. For strength and durability as well as neatness, convenience and cleanliness, these gates have no equal.

Specifications

Sizes of Tubing. The frame and fillers of the bull pen gate are made up of 1⅝ O. D. steel tubing. The frame of the maternity pen gate is made of 1⅝ and the fillers of $1\frac{1}{16}$ O. D. steel tubing. The frame of the calf pen gate is made of 1⅝ and the fillers of $1\frac{1}{16}$ O. D. steel tubing.

Dimensions. The standard size of Bull Pen Gate is 3 feet 5 inches wide and 4 feet 8 inches high; Maternity Pen Gate, 2 feet 11 inches wide and 4 feet high, and Calf Pen Gate, 2 feet 5 inches wide and 3 feet 4 inches high. All measurements are from out to out of frame.

Hinges and Latches. The Hinges described on another page, will be furnished in the heavy size for the bull pen gates and in the standard size for the maternity and calf pen gates. The Latches for the bull pen gate are made of $\frac{5}{16}$x1⅜ steel bars doubled back as shown in the cut. For the maternity and calf pens the Latch is made of ¼x1¼ steel bar, doubled back the same way.

Weight. The standard Bull Pen Gate complete with hinges, latches and hold-shut catches, weighs 128 lbs.; Gate for maternity pen with hinges, latch and catch, weighs 84 lbs.; Gate for calf pen, with same fittings, weighs 58 lbs.

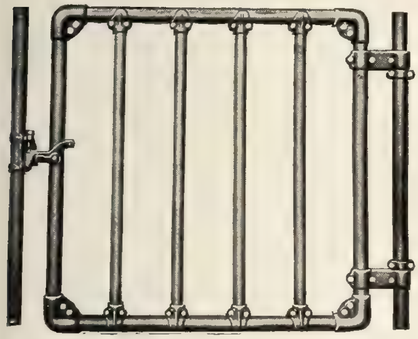


Fig. 1171

Louden Improved Alley Gate

Fig. 1171 is the Louden Improved Alley Gate with vertical fillers and a latch that will **slam shut from either side and never swing past.** This latch is **absolutely stock-proof.** No cow or horse can by any possibility open it. It is furnished with hinges which will swing both ways.

Specifications

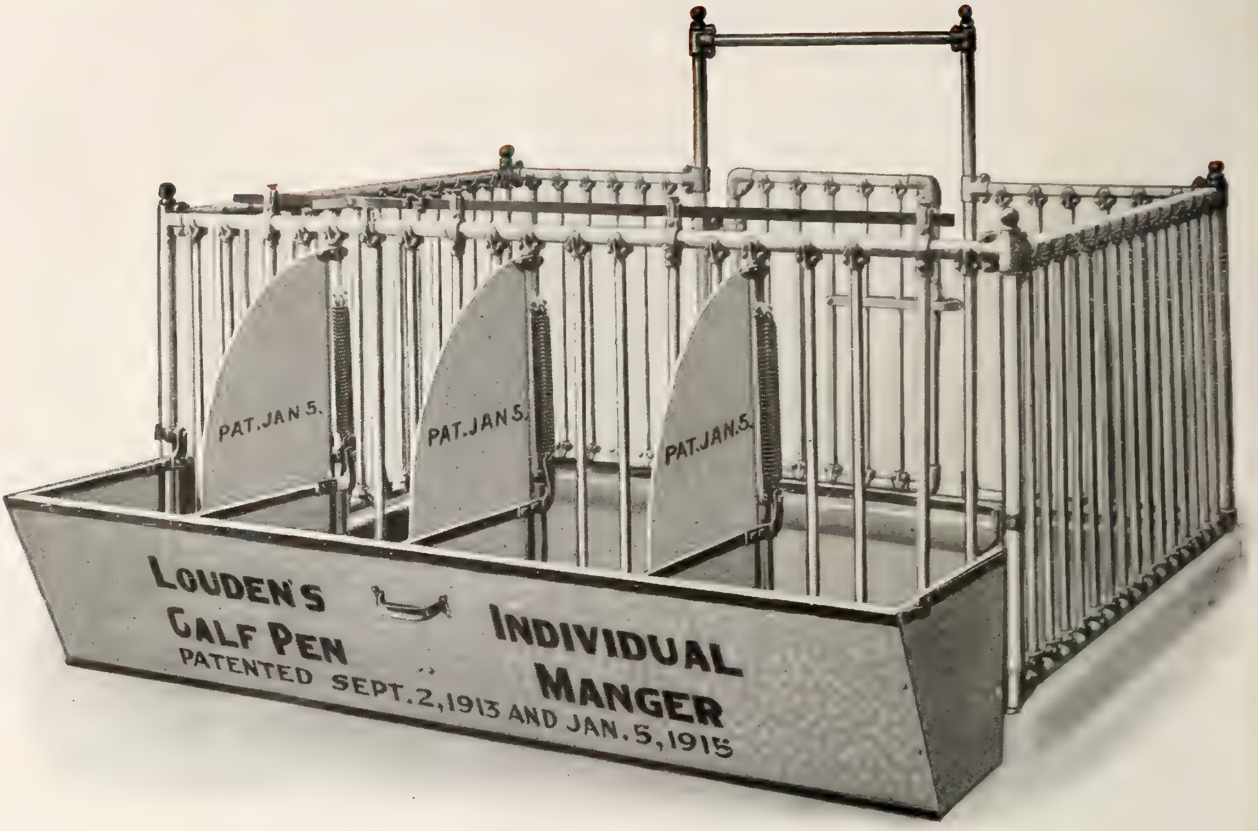
The Standard Sizes of Alley Gates are 3 ft. 4 in. high and 2 feet 11 inches, 3 feet 5 inches, and 3 feet 11 inches wide, out to out. These sizes are suitable for alleys 3½, 4 and 4½ feet wide in the clear. Other sizes will be made to order.

Sizes of Tubing. The frames are made of 1⅝ O. D. tubing and the fillers are $1\frac{5}{16}$ O. D. tubing. The fillers are spaced on centers 8 to 9 inches apart.

Weights. With latch and hinges and two collars, which go with the gate, the 2-foot 11-inch size weighs 57 lbs.; 3-foot 5-inch size, 65 lbs., and 3-foot 11-inch size, 73 lbs.

In ordering be sure to specify the outside diameter of posts. If different sizes are used, give size to which the gate is hinged and also size of post to which the latch is connected. If square posts are used so state in order.

> Red Lake Falls, Minn., July 3, 1916.
> Louden Machinery Co., St. Paul, Minn.
> Gentlemen:
> Your equipment that I put in my new barn has proved very satisfactory and my foreman is well pleased with it.
> Yours truly, J. A. Duffy.



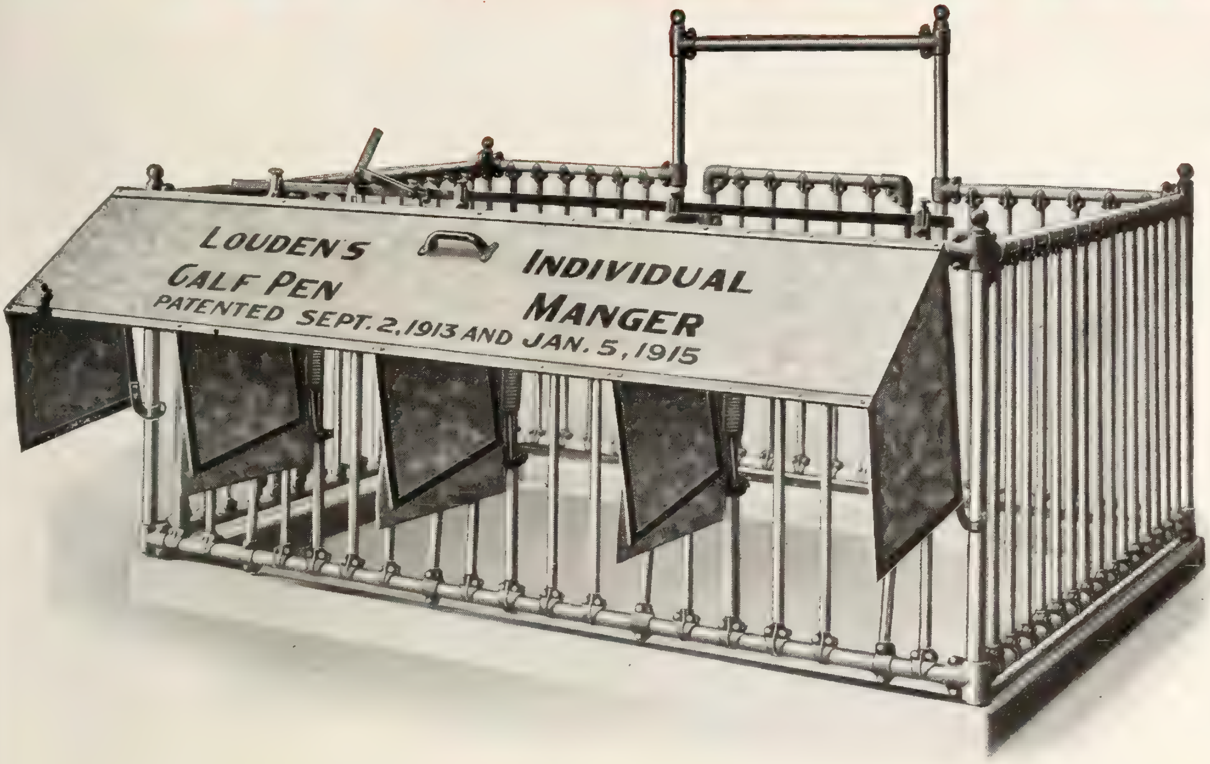
Louden Calf Pen with Individual Mangers—Fig. 1021

Here is something for your barn that will greatly improve it and will start your calves on the way to future productiveness and profit. The Louden Calf Pens are complete in every respect, being light, well ventilated and easy to keep clean. They are fitted with stanchions to hold the calves in place while feeding. They are provided with **individual mangers** which will prevent the calves from stealing each other's feed or upsetting their buckets. They have **Patented Stationary Up-Standing Shields** which completely overcome the harmful habit of sucking each others ears.

The stanchions can be opened all at once or only one at a time. The manger is **spring balanced** so that a boy can easily raise and lower it. When raised half-way up it will **stand at any point** without any hooks or latches or anything else to hold it in an elevated position. The manger divisions telescope with the stationary shields in raising and lowering. The springs can be **readily adjusted** to always perfectly balance the manger. The pen is securely enclosed by **a strong gate** hung on substantial hinges and has **a Hold-Shut Latch,** described on another page, which prevents the calves from getting out or other animals from getting in. The design is neat and artistic and besides its great usefulness, it is an ornament in any barn.

Calves will grow faster and will do better in a neat, light, well ventilated, thoroughly sanitary Louden Calf Pen than in the old, stuffy, dark, dirty, wooden boxes which are sometimes called pens and which are too often used to stow away little calves until they are able to shift for themselves. As the "twig is bent so the tree is inclined," is as true of baby calves as it is of other babies, and they should have the kindness and care that will make their wabbly little legs grow straight and strong and which will best develop their vitality so they will be most efficient when they take their place in the world as producers. A Louden Calf Pen is one of the essentials in raising calves.

Fig. 1021 shows the manger in feeding position and Fig. 1022 on opposite page, shows it raised for cleaning. The manger divisions are hinged to the vertical tubing or fillers of the pen. The lower ends of the springs are **pivotally** connected to the hinges and their upper ends are **adjustably** connected to the tubing as most plainly shown in Fig. 1021. The manger raises high enough to pass away above the calves' heads. The stanchions are easily adjusted to suit growing calves.



Louden Calf Pen with Individual Mangers—Fig. 1022

Specifications

Sizes of Tubing. The top and bottom rails, corner posts and gate posts and the arch-rail are 1⅝ O. D. steel tubing. The vertical fillers and stanchion bars are $1\frac{1}{16}$ O. D. steel tubing.

Lengths of Tubing. The corner posts are 52 and the gate posts are 81 inches long. The fillers and stanchion bars are 36 inches long. The standard height of panel is 46 inches above the floor.

The Connections. The top and bottom rails are connected to the corner post by the Louden Corner Couplings. The fillers are set 5 inches apart on centers and are connected to the top and bottom rails by Louden Grip Clamps.

The Construction. The pens are built in panel sections extending from one corner post to another and from the corner posts to the gate posts. The fillers in the stanchion section are spaced to suit the stanchion bars. All the fillers are adjustable on the top and bottom rails.

The Stanchion Section. The standard width between the Stanchions is 2 feet. A section 8 feet long will have 4 stanchions; a 10-foot section, 5 stanchions, etc. The stanchion bars are hinged to the bottom rail and their upper ends have malleable castings which extend above and slide on the top-rail.

The Shift Bar. The upper ends of stanchion slide castings are connected to a Steel Shift Bar $\frac{3}{16}$x1 inch, and long enough to take in the row of stanchions. Near one end it is provided with a shift lever, which is pivoted to a casting on the top-rail so that by rocking the lever back and forth the shift bar will be moved and will open and close the stanchion bars.

Drop Pins. Each slide casting is fitted with a Drop Pin which drops in an adjacent notch in the shift bars and thus connects the slide casting to the shift bar. By lifting the drop pin the stanchion bar may be moved independently.

Manger Construction. The Manger, comprising the outside, the ends and the divisions are made of No. 18 galvanized sheet steel. The outside is reinforced at the top, and the ends and the divisions, are joined to the outside by 1x1x⅛ steel angles. The lower edge of the outside and the upper and lower and inner edges of the ends and divisions are reinforced by $\frac{3}{16}$x1 inch spot-welded steel strips. The standard dimensions of Manger are 25 inches out from panel at top, 16 inches out at bottom, 18 inches high and 2 feet wide.

The Stationary Shields are made of No. 18-gauge sheet steel, reinforced with $\frac{3}{16}$x1 inch spot-welded steel strips. They are 24 inches long and 20 inches wide at bottom.

Weights. Plain panels, per lineal foot, 15 lbs. Stanchion panels, per lineal foot, 16 lbs. Gate with hinges, 58 lbs. Arch-rail and gate posts above panel, 38½ lbs. Manger, two compartments in section, 87½ lbs; three compartments in section, 124 lbs.; four in section, 154½ lbs.; five in section, 181 lbs.; Stationary Shields with clamps, each 11 lbs.

Windom, Minn. June 6, 1916

Louden Machinery Co.,
St. Paul, Minn.

Gentlemen:

All of the barn equipment which I purchased from you has given the very best of satisfaction. I heartily recommend your goods to any farmer wishing to equip a barn up-to-date.

Yours truly,
Delburt U. Weld.

Louden Adjustable Center-Pivot Gate Hinges

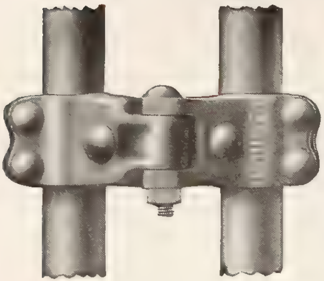


Fig. 1172

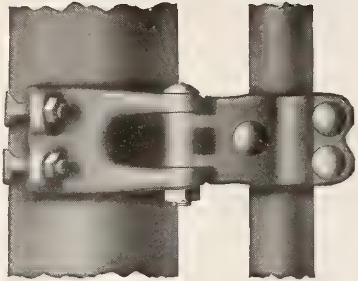


Fig. 1173 Pat'd Jan. 18, 1916.

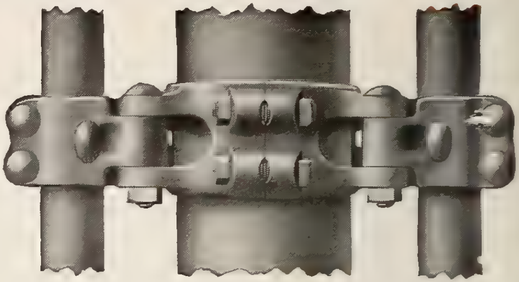


Fig. 1174

The above are views showing three different ways of using the Louden Adjustable Center-Pivot Gate Hinge. Fig. 1172 shows the use of the hinge with 1⅝ or 1⅞ O. D. tubing. Fig. 1173 shows the hinge attached to a large post or column, and Fig. 1174 shows a double hinge attached to a large post or column to hang a gate on each side of the column. For 1⅝ or 1⅞ O.D. tubing, four pieces of malleable castings are used which are rigidly clamped to the tubing by six heavy bolts.

The hinges can be clamped to the posts at different angles as shown by Figs. 1175 and 1176, to vary the distance between the gate frame and the post to which it is hinged, to suit requirements. This is an important feature. If the space between the gate posts should happen to be a little too wide or too narrow an adjustment of 2½ inches can be made in setting the hinges, so the latch on the gate and the catch on the post will always be correctly adjusted.

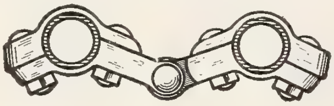


Fig. 1175

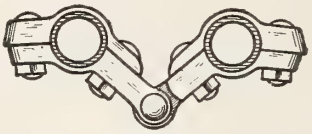


Fig. 1176

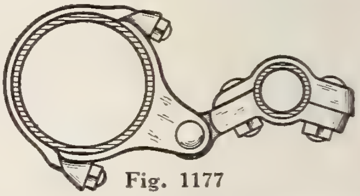


Fig. 1177

These figures are sectional views showing the adjustment of the hinges. Fig. 1175 shows the hinge extended or widened and Fig. 1176 shows it contracted or narrowed. Fig. 1177 shows the attachment to a large post by means of clip bolts which can also be adjusted as explained. (See Plate 16, page 138.) When a gate is hinged on each side of a large post, as shown by Fig. 1174, the hinge castings for the large post is bolted together as shown, and by using longer bolts on one side and shorter bolts on the other side, the castings may be adjusted on the post. The center pivot permits these adjustments and also **offsets** the hinge so the gate can be opened clear back against the panel of the pen which is another important feature not possessed by other kinds of hinges. Of all other gate hinges for tubular posts or columns, none are so strong or so convenient in use, or have the desirable adjusting features of the Louden Hinge.

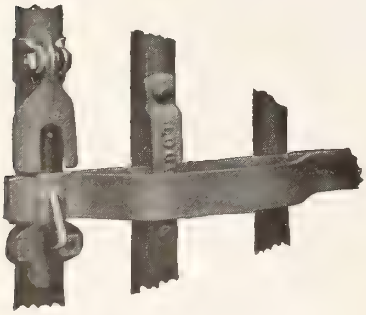


Fig. 1178
Patented May 16, 1916

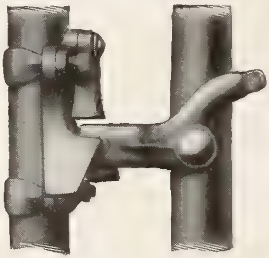


Fig. 1179
Pat'd April 18, 1916

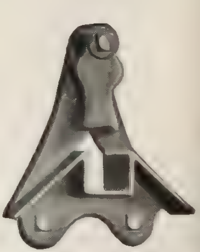


Fig. 1180
Patented April 18, 1916

Louden Safety Gate Latches

Fig 1178 is a detailed view of the Louden One-Way Safety Gate Latch used on our animal pens. It is provided with a Latch Guard which swings out over the latch as soon as it drops into the catch and prevents it from being lifted out of the catch until the keeper is pushed back out of the way. No animal can open the latch when it has this Latch Guard. Fig. 1179 is a detailed view of our Two-Way Safety Latch for alley gates which swing in both directions. The Latch Guard is pivoted above the notch and will swing to one side or the other enough to allow the latch to slide up the catch from either side and drop into the notch, but not enough to permit it to pass clear through. To unlatch the gate in either direction the keeper is pushed to the other side. Fig. 1180 is a Two-Way Safety Catch for a square wooden post or a wall.

Louden Name Plates and Name Plate Holders

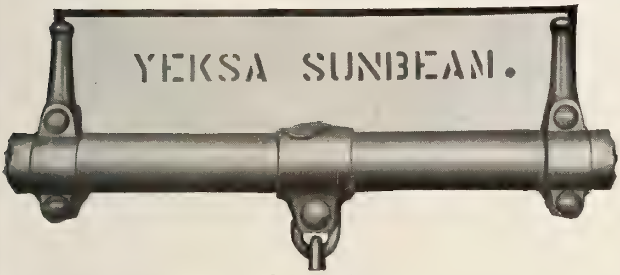

YEKSA SUNBEAM.

Fig. 935

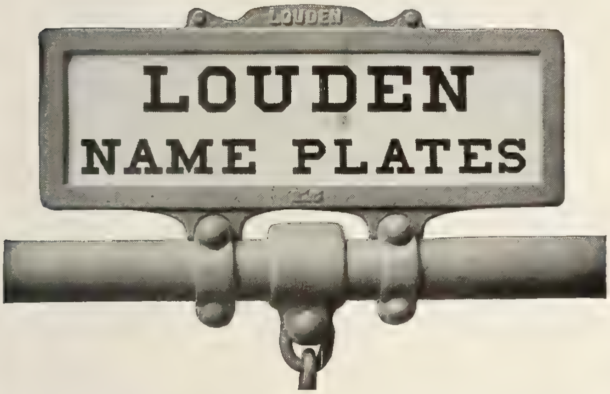


Fig. 1181

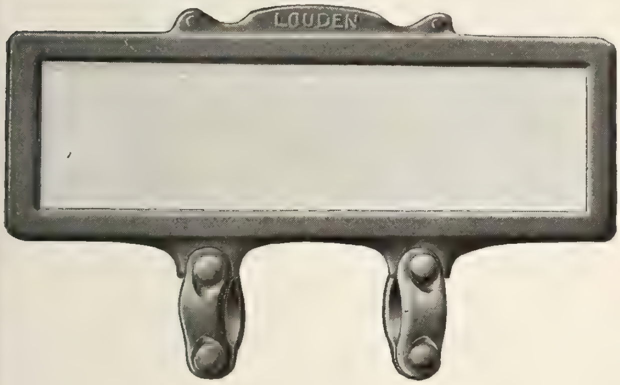


Fig. 1182

Fig. 935 is our original Name Plate with Holders. It is simply a sheet of galvanized steel, 4x15 inches, standard size, and a pair of clamps having upwardly extended ends to hold the plate between them. The size of the plate may be varied to suit requirements. Even as large as 24 inches square may be used to make a score card to keep a record of the cow's work, or for other purposes. In place of the sheet steel a heavy cardboard may be used.

This is the simplest name plate and holder ever devised and it is actually the best for all purposes. It is also the most durable. Cows with long horns cannot punch holes in the steel plate. The cow's name and any other information may be painted or stenciled on the plate, or it may be coated for use as a black-board. The cut shows the Holders clamped on the top-rail of a stall and the lower edge of the plate cut out to fit over the stanchion holder which shows in the cut.

Fig. 1181 is our New Name Plate Holder, also, mounted on the top-rail of a stall. It is provided with two sheets of isinglass, each 4⅛x12½ inches, between which the name plate or card is inserted.

Fig. 1182 shows the holder detached with the isinglass in, but the name plate left out. The holder is clamped on the top-rail by collars shown in the cuts. This is the most artistic Name Plate Holder manufactured.

The presence of name plates on stalls adds to the appearance and identifies the cows in a manner that bespeaks the owner's consideration and high appreciation of their value. There is no doubt that buyers or patrons visiting your barn will be influenced more or less by neat and attractive name plates.

**Holders are made for either 1⅝ or 1⅞ top-rail.
Be sure to specify size.**

Louden Salt Roll and Holder

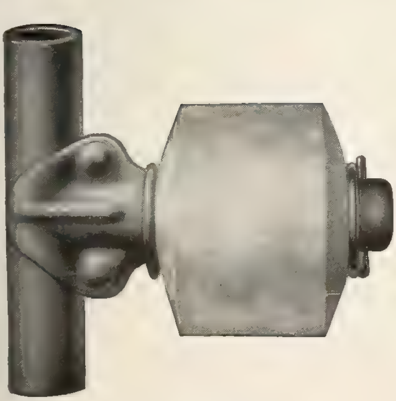


Fig. 1056
Patent Pending

The most convenient and economical, and altogether the **best way of salting cattle and horses.** The salt is formed by heavy pressure into cylindrical rolls about 5 inches in diameter and 4½ inches long with convex ends and a hole through the center. The Roll is easily mounted on our Holders and will revolve when the animal licks it.

The Roll is extremely hard to chip or break and disintegrates very slowly, and is therefore the most economical way that stock can be salted. There is no danger of the animal getting too much salt at a time. Neither is there any danger of the salting being neglected. Special circular on application.

Fig. 1056 shows salt roll mounted on holder for vertical stall pipe. We also furnish holders for either vertical or horizontal wood stall timbers, to be attached with bolts or screws. (See page 210.)

Mr. R. B. Young, proprietor of The Chicago Stock Farms, Buffalo Center, Iowa, after using our Holders several months, writes: "The Salt Roll Holders are very satisfactory and please me in every way."

Louden Tubular Steel Hog Pens—Fig. 1167

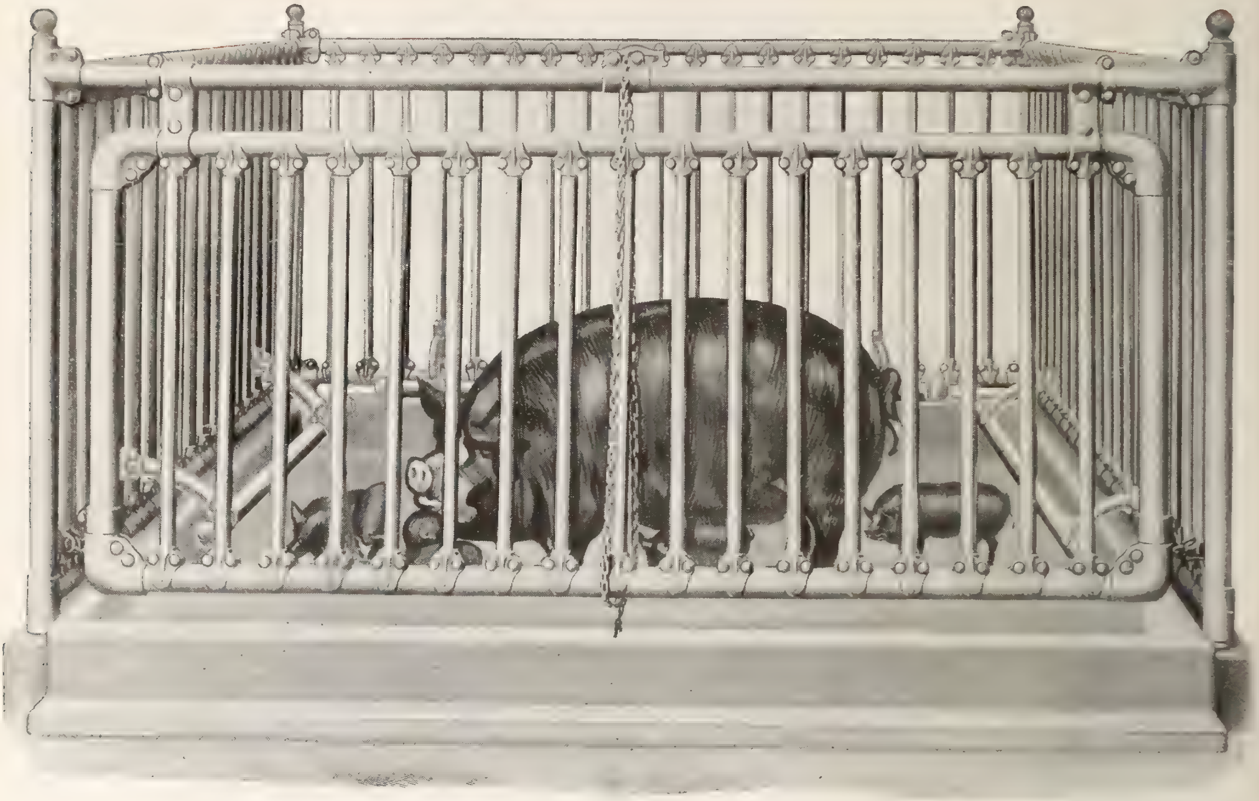


Fig. 1167—Hog Pen With Swinging Section and Concrete Trough

Specifications

Size of Tubing. Corner posts, top and bottom rails, frame of swinging panel, gate posts, guard rails, and uprights to which guard rails are clamped, are made of $1\frac{5}{8}$″ O. D. steel tubing. Fillers are made of $1\frac{1}{16}$″ O. D. steel tubing.

Length of Tubing. The height of the panel above the floor is 3′10″. Fillers for main panel are 3 feet long. Fillers for swinging panel are 2′6″ long. Corner posts are 4′4″ long, and should be set 5″ in the concrete.

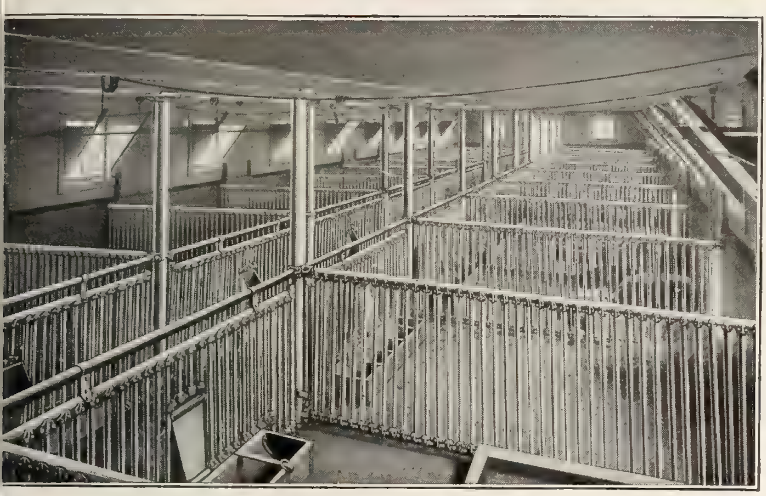
Size of Gate. The standard size of gate is 3′4″ high over all, by 1′11″ wide over all. The gate opening is 2′6″ wide, center to center of gate posts.

Connections. The top rails are connected to the corner posts by corner couplings. They are connected to the gate posts by interlocking dust-proof couplings. (Fig. 933, page 77.) The fillers are spaced 2½, 3, 3½, or 4 inches apart on center, as ordered, and are connected to top and bottom rails by grip clamps. Price of panel varies according to spacing of fillers.

There is a rapidly growing demand for the Louden Tubular Steel Hog Pens. Farmers are learning that to make hogs **profitable** they must—like cows—be **kept clean and made comfortable.** The question is whether the hog will have to spend his energy in fighting filth and disease, or, by proper treatment, be free to devote it to the production of fat which the world wants and for which it is willing to pay a good price.

A hog to be profitable **must be a fat producer,** as a profitable cow must be a **milk producer.** The greater fat producer a hog becomes the more tender he will be, the more liable to contract disease and the more care and attention will he require. The "Razor Back" was a healthy hog and needed little or no care, but there was **no profit in him.** This is generally the case with things which do not require care. They do not increase the bank account.

Louden Tubular Steel Hog Pens—Continued



Hog House on Homewood Farms, Moline, Ill.—Louden Equipped

If we will stop to consider we will find that the hog has been outrageously abused in many ways which it is not necessary to recount here. The hog is not irrevocably a filthy animal. It is largely the way he has had to live that has made him filthy. The fattening process is more or less a heating process, and the hog goes into the mud hole to cool the fever in his blood. The hog needs clean comfortable quarters and this can be secured by using the Louden Tubular Steel Hog Pens, set in a concrete floor, and supplied with plenty of pure water to keep him clean.

The illustration to the left shows a section of the Hog House on the Homewood Farms near Moline, Ill.,—Owned by Wm. Butterworth, President of Deere & Co. This is one of the finest hog houses in this country. It is fitted throughout with the Louden Tubular Steel Hog Pens. It is kept so clean and is so well ventilated that it is entirely free from the disagreeable odor common to hog pens.

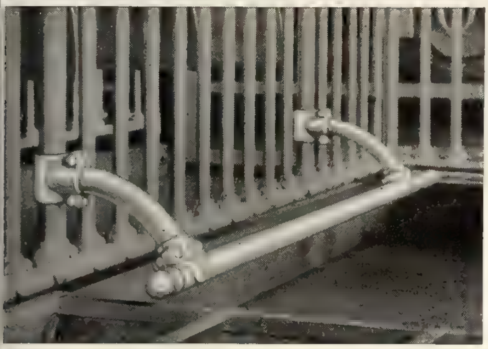


Fig. 1286. Panel With Guard Rail.

Fig. 1167 shows one of the Louden Pens fitted with a swinging panel set over a trough so that the panel can be swung either to the inside or to the outside of the trough and be locked in either position. The object is to swing the panel in to keep the hogs out of the trough while filling it and then swing the panel out to give the hogs the entire width of the trough while they are eating.

Fig. 1168 is a sectional view of the arrangement. The panel is hinged to the top-rail of the pen and is held in position by a chain, C, which is passed over the top-rail and under the lower rail of the swinging panel, and is then fastened to opposite sides of the trough. The chain is passed through a locking piece, L, which is slidably mounted on the top-rail. This locking piece has an opening in its center large enough for the chain to pass through and let the panel swing to the sides as far as the dotted lines in Fig. 1168.

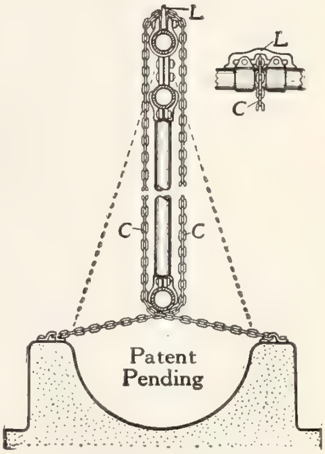


Fig. 1168

The ends of the locking piece have narrow slots and when slid to either one side or the other it will catch the links of the chain and will hold it in locked position. The arrangement is extremely simple and it is easily operated It is also strong and reliable in its operation. Fig. 1168 shows a concrete trough.

The pens in which brood sows are housed should be provided with strong guard rails along each side to prevent the sows from lying on the young pigs.

The Louden Guard Rails are made of 1⅝ inch steel tubing, supported by short curved pieces of the same material clamped to extra heavy uprights in the panel. They are strong, durable, and ornamental. Fig. 1286 shows a section of a pen fitted with guard rails.

Our Tubular Steel Pens are also well suited for sheep and we are supplying them for this purpose. We are prepared to equip either hog houses or sheep houses, large or small, with pens to suit requirements, and will be pleased to furnish further information or mail blue prints showing different installments.

Louden Window Ventilator

Specifications

Size Window: Fits any window where sash does not exceed 48 inches in height. Special ventilators for higher windows can be furnished, at slight additional cost, on special orders.
Fixtures Include: 2 shields (one right and one left), two dogs, two braces, 1 catch and 1 keeper, 22 screws, and 2 rivets.
Finish: Galvanized.

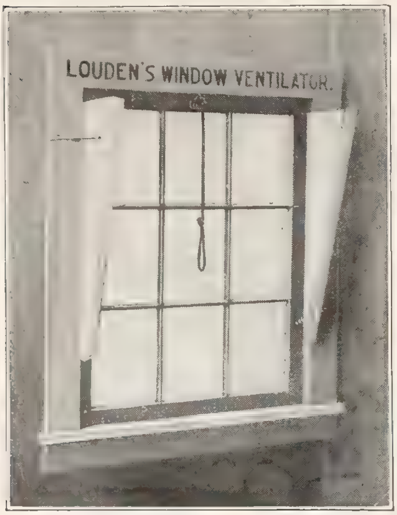


Fig. 986
Window Closed

Fresh air in the barn is as necessary for the comfort and health of the stock as fresh water and pure food. According to experts the average cow consumes more pounds of air than she does of either food or water. A 1,000 pound cow consumes about 224 pounds of air daily.

The Louden Window Ventilator makes possible an abundance of fresh air without injurious draughts. Instead of opening like an ordinary window the sash tilts inward from the top and rests against metal shields, as shown in Fig. 988-A. The cold air, instead of striking the stock directly, is thrown upward, and mingles with the warm air near the ceiling before it comes in contact with the animals.

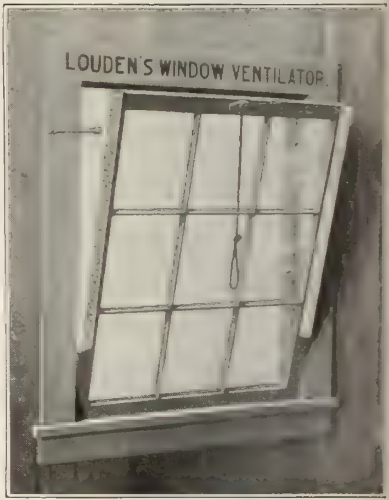


Fig. 988-A
Window Open

When it is necessary to keep stock in the barn during warm weather the window may be opened and raised, as shown in Fig. 988-B, to give a direct and cooling circulation of air throughout the barn. This feature is a decided improvement over the hinged type of window, which cannot be raised. With the Louden Window Ventilator the sash may easily be removed from the window if desired.

All photos shown are inside views.

Fig. 989 is a cross section of a window fitted with a Louden Window Ventilator. It shows the window open and slightly raised. The sash is held in the raised position by two locking dogs, one on each side.

The shields are made of galvanized sheet steel. They are secured to the casing by screws along the inner edges. Flanges along the outer edges, turned in, support the sash when open. The shields are stiffened by brace rods, riveted on.

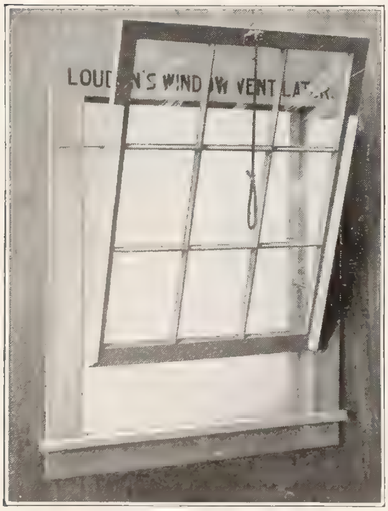


Fig. 988-B
Pat'd Feb. 7, 1916
Window Open and Slightly Raised

The Louden Window Ventilator is made in different sizes to fit any window. To get the proper size, give height of sash. This measurement is absolutely necessary before we can make up the shields. No other is needed.

The Louden Window Ventilator is the most perfect window ventilator made. It is inexpensive and extremely simple. Specify it when you build or remodel your barn

The Louden Machinery Co. of Canada, Ltd.
Dear Sirs:

I am well satisfied with the Car and Slings; they are among the greatest labour savers on the farm, especially this year, when hay and straw are so short. I can put enough feed into the loft in one day now to last me a month, and no lifting and forking. Wishing your Company a prosperous year, I remain,

Yours truly,
Geo. Church,
Niverville, Manitoba.

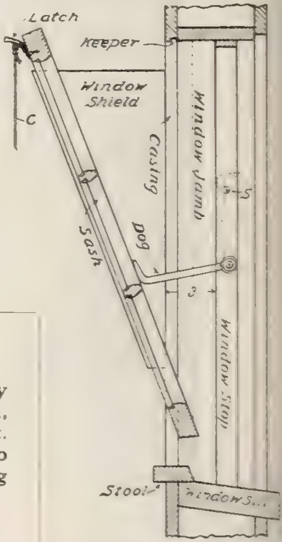


Fig. 989
Cross Section

Louden Cupola — Fig. 1269

Specifications

Sizes

Size	Ventilating Flue	Base Moulding	Height
No. 4 Louden	20-inch	36x36 inches	9 feet
No. 3 Louden	24-inch	46x46 inches	11 feet
No. 2 Louden	27-inch	49x49 inches	12 feet
No. 1 Louden	30-inch	54x54 inches	13 feet
No. 100 Louden	36-inch	64x64 inches	14 feet

Weights and Estimate of Size of Cupola Wanted

Building 20x28, one No. 4 Louden Cupola; shipping weight, 160 lbs.
Building 24x28, one No. 3 Louden Cupola; shipping weight, 180 lbs.
Building 30x40, one No. 2 Louden Cupola; shipping weight, 200 lbs.
Building 36x50, one No. 1 Louden Cupola; shipping weight, 220 lbs.
Building 40x70, two No. 1 Louden Cupolas; shipping weight, 220 lbs.
Building 60x60, one No. 100 Louden Cupola.

No charge for crating

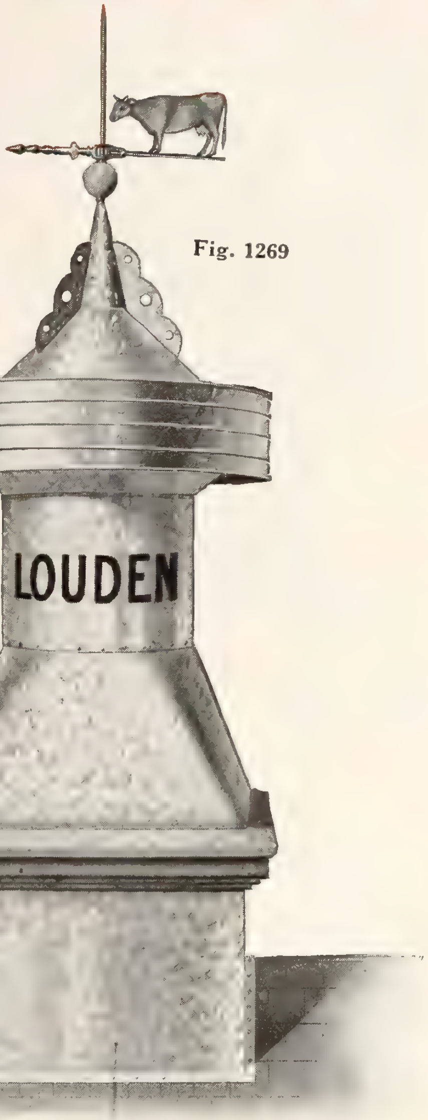


Fig. 1269

The Louden Cupola is built along standard lines on principles that have been accepted by the leading ventilator authorities and most ventilator manufacturers.

It is a well-built, substantial cupola and will last a lifetime. As an ornament to the barn it is surpassed by no other ventilator. It is storm proof and bird proof. It is not how cheap but how good we can make the Louden Cupola. We do not spare any cost to make it lasting.

Have your carpenter figure on a wooden cupola, say 6x8 feet, which at its best is not as good a ventilator as the Louden. Do not overlook the cost of weather vane, which would be $3.00 to $5.00, and $3.00 to $5.00 for painting, which would have to be done every few years, and would be additional expense. Then compare with our price and we believe you will find that the Louden is much cheaper, and after all it is absolutely impossible to build a good ventilator out of wood.

You buy a cupola once in a lifetime and you want it as substantial as you can get it. Any ordinary mechanic can put it on the building in from two to four hours. Wherever a carpenter puts a Louden Cupola on a barn he finds that he does not want to make one out of wood again, but will always recommend the Louden. He knows that he is saving money for the man that he is building the barn for and giving him a better cupola than can be built of wood.

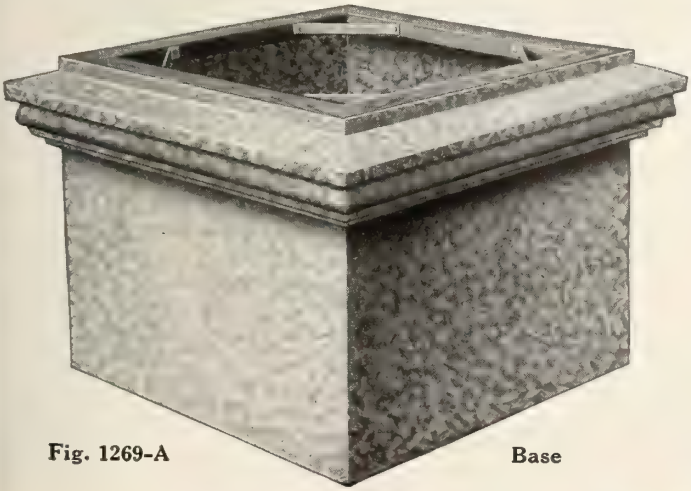
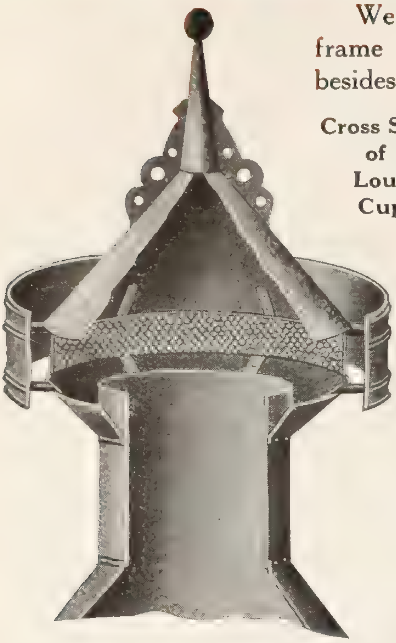


Fig. 1269-A Base

The Louden Cupola's One-Piece Base

The Louden base requires no frame on the roof before putting it in place, as the base is made up complete in one solid piece of galvanized material.



Cross Section of the Louden Cupola

We also use our own specially designed moulding with angle-braced wood frame inside, which adds great strength to the moulding and base proper, besides being very artistic. We only use the best of galvanized material in their construction including all galvanized bolts and washers. They are built strong and will stand windstorms and will not get out of shape, and are also screened to keep out birds. They are built on scientific principles for ventilation and it does not matter which way the wind blows or what the surroundings are as the Louden Cupola will always have an up-draft within and will ventilate the building well. They require no painting and will last longer than the ordinary frame building. They do not weigh one-third as much as the old style wood cupola and will not sag the roof. The Louden Cupola is furnished with 30-inch Full Body Gold Leaf Weather Vane, the best that can be made, and one that will stay bright, in the following designs: Horse, Cow, Sheep, Pig or Rooster. In ordering always state the kind of weather vane you want.

Louden Ventilators
Fig. 1268

Every living creature must have fresh air—none can live without it. When air enters the lungs and is breathed out, there has been removed from it the life-giving qualities. It has changed to poisonous gas.

The warmer and better a barn is constructed the more necessary is artificial ventilation. On thousands of farms there are "well built" barns where lack of pure air is sapping the vitality of the stock. Upon opening the doors of such a barn in the morning a man would almost be nauseated by the sickening, poisonous air were it not for other more noticeable but far less dangerous odors.

An average 1,000-pound animal will consume about 3,000 cubic feet of air in 24 hours. This "consumed" or used air must be removed from the barn and fresh air must be allowed to enter to take its place.

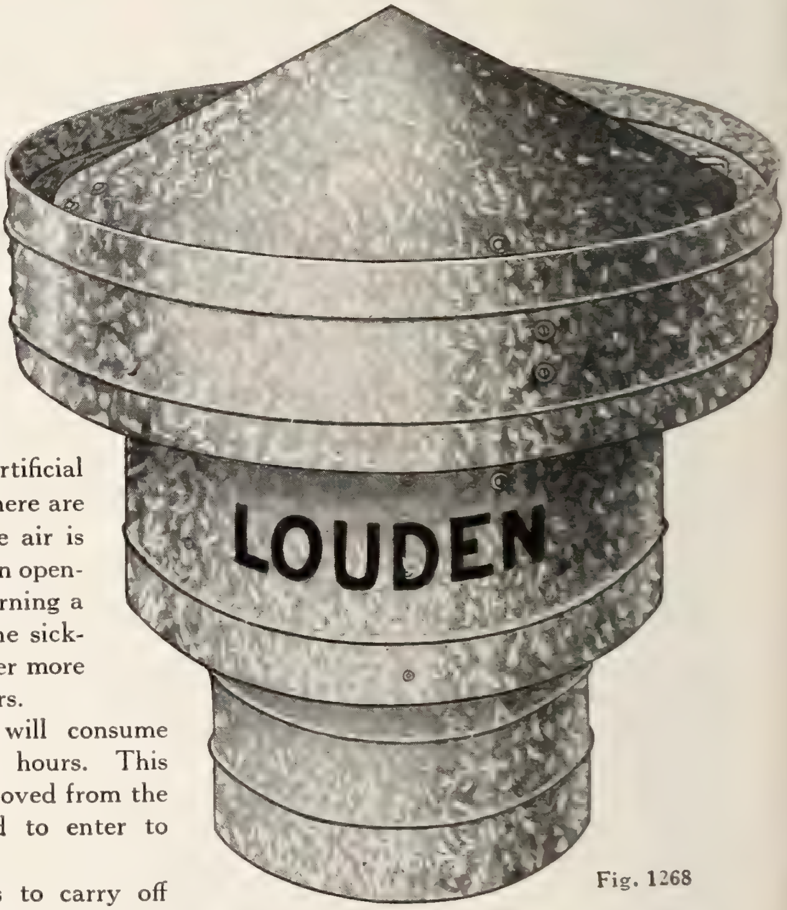


Fig. 1268

Most new barns have vent flues to carry off this impure air, but in many barns these outlets are not doing the work for which they are intended. In some cases this failure is due to a "cap" or "ventilator" that hinders rather than assists the ventilating system.

Note: We do not furnish bases with Louden Ventilators. Different roof pitches and different conditions for attaching make it impossible to do so.

Specifications

Size—Diameter of Throat in inches	Gauge Metal used	Area in sq. inches	Weight without Base	Capacity in cu. ft. per Hour
12	24	113	26 lb.	36,500
18	24	254	65 lb.	82,000
24	22	452	124 lb.	145,900
30	22	707	195 lb.	231,000
36	20	1,017	245 lb.	304,000

The above capacities are based on a wind velocity of 9.3 miles per hour, which is the average for the entire country, a difference of 20 degrees between the inside and outside temperature and a straight flue 30 feet high. If you wish to know the capacity of any size ventilator under conditions different than the above consult our engineering department. The service is free.

When the Louden company decided to design and manufacture a ventilator we started planning from the "ground up." The fact that some big selling ventilators were made in a certain way did not influence our plans. Neither did we permit mere personal opinion to influence our decisions. We purchased and have used the most expensive and reliable instruments or machines (anemometers) for our tests and reached our conclusions through their records. The anemometers used are the official testing apparatus of the government.

It is a fact well known to ventilation engineers that the most efficient way to produce a draft in a flue is to pass a current of air across the top of the flue. Careful tests show that a plain flue projecting through the roof will give much better results than most so-called "ventilators" now in the market.

The ideal ventilator must depend upon correct scientific principles for its construction and operation. It must convert the largest possible per cent of the energy contained in the wind into a pumping or pulling force to draw the foul air up the flues and out of the building. At the same time there must be no air enter the ventilator from the outside to carry in rain and snow. Rain and snow entering the ventilator would run down the flue, necessitating gutters to catch it and drain it out. This would be undesirable as the openings would often clog up in the winter. Neither should there be any moving parts to get out of order and give trouble.

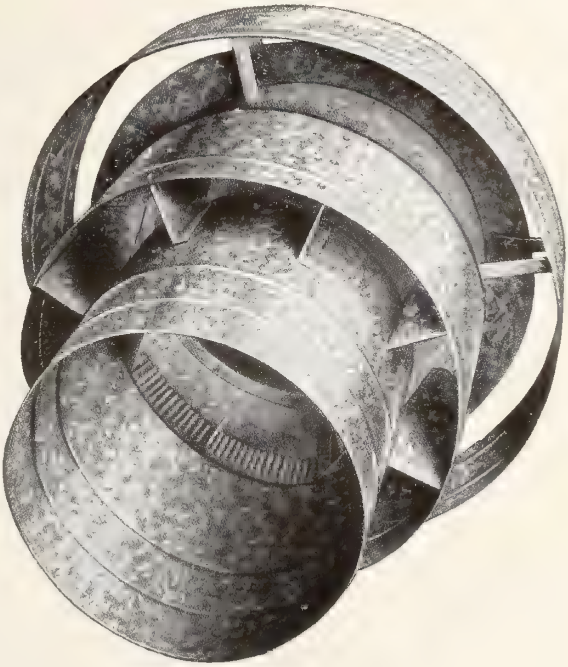


Fig. 1268A

The Louden Ventilator fulfills all requirements. The exhaust openings are of ample area and they are all so placed that the wind blows **across**—never into—the openings. **Every opening in the Louden Ventilator is an exhaust opening. No air enters the ventilator at any point.** Even on the side exposed to the wind the air is constantly **coming out** of all openings. No matter how strong or light the wind may blow—from north, east, south, or west—in a March blizzard, in April shower, or on the sultriest days of August—there is always a strong, steady draft up the flue that will give ample ventilation. It will also do its duty regardless of the difference of temperature inside and outside the building.

The Louden Ventilator is absolutely storm proof.

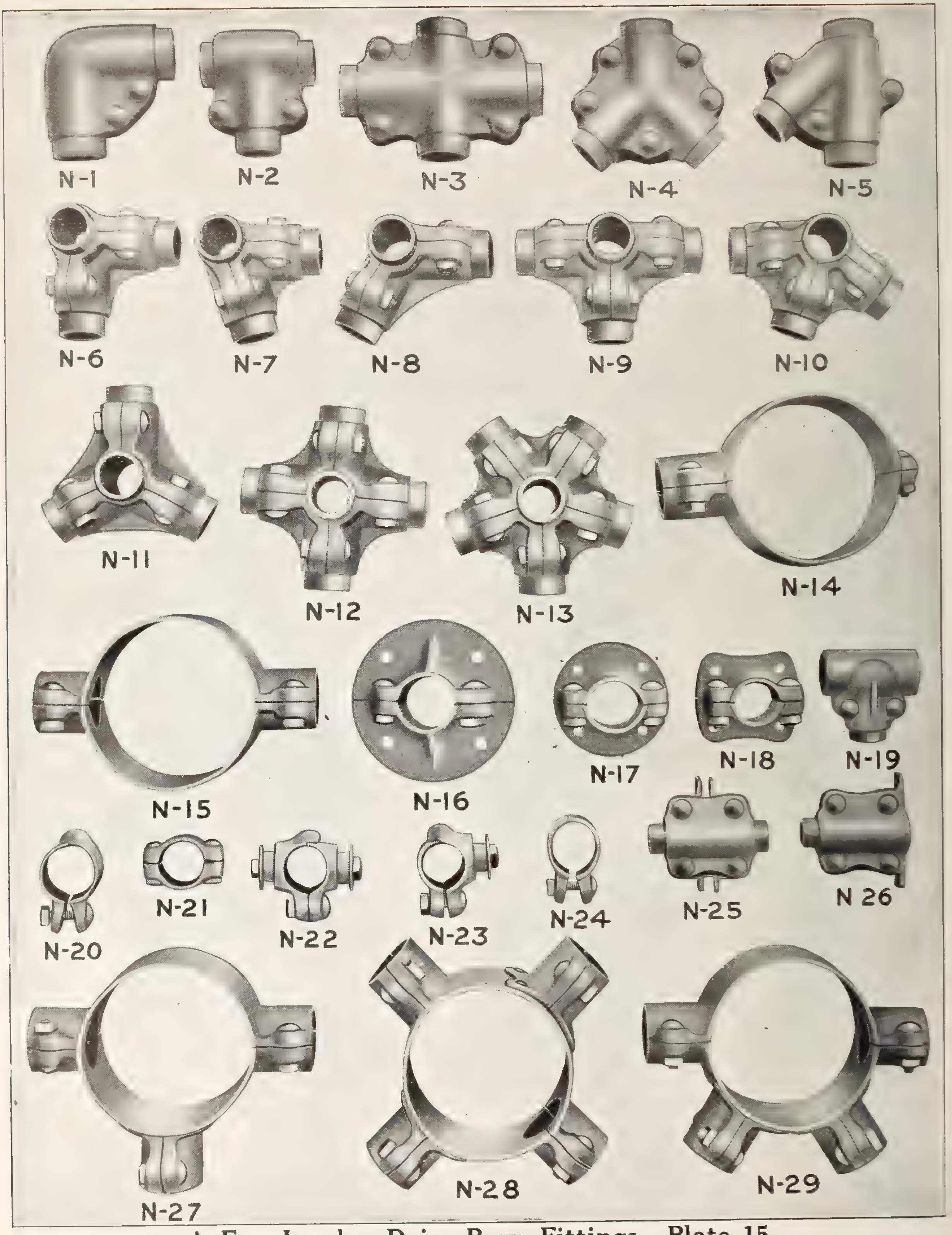
Construction of Louden Ventilators

The appearance of Louden Ventilators is artistic and attractive in its simplicity.

The construction is heavy, rigid, and of the very best materials. Neither time nor expense was spared in designing this ventilator to have it accomplish the needed ventilating results and be time, storm, and rust resisting.

The lower band of Louden Ventilators is strongly braced inside, clear around, by eight braces. This gives the whole ventilator an exceptionally strong and rigid construction. The cone-shaped cap offers the least possible resistance to the wind and gives no opportunity for rain, snow, or sleet to collect.

The smaller sizes of the Louden Ventilator are made of 24-gauge steel, the 24 and 30 inch sizes of 22-gauge steel, and the larger sizes of 20-gauge steel. All parts are carefully riveted with special rust-resisting rivets or are electric welded, and at the joints the sheet metal is joined in the most scientific and substantial manner. Figure 1268A shows how the ventilator is constructed.



A Few Louden Dairy Barn Fittings—Plate 15
We have over 1000 Barn Equipment Patterns and can equip any kind of barn

Some of the Louden Dairy Barn Fittings

Plate 15 on preceding page shows a few of the Louden Fittings for Dairy Barn Equipments. The letters and figures attached are neither figure numbers nor pattern numbers, but are intended to designate the parts only in connection with this plate. Pat'd Sept. 20, 1910 and Aug. 17, 1915.

In ordering, be sure to give the Plate Number (15) as well as the names and the letters and figures attached to the parts. Also, give size or sizes. All measurements are outside diameters. See table of diameters on another page.

Specifications

N-1, is our improved Single Piece Elbow. It is made in two sizes, standard, for 1⅝", and large, for 1⅞" O. D. tubing. In all couplings the 1⅞" size can be used for 1⅝" by bushing.

N-2, Improved Interlocking Tee-Coupling, made in three sizes, standard, for 1⅝", and large, for 1⅞" O. D. tubing; also, for 1⅞" O. D. heads and 1⅝" O. D. Tees. See Fig. 933, page 77.

N-3, Improved Cross Coupling, made in three sizes, standard, large and small, for 1⅝", 1⅞" and 1$\frac{1}{16}$" O. D. tubing.

N-4, Inverted Y-Coupling, one size, head tubing, 1⅞" O. D., legs, 1⅝" O. D.

N-5, Side or Angle Tee-Coupling (45 degrees), one size, head for 1⅞" and Tee for 1⅝" O. D. tubing.

N-6, Right Angle Corner Coupling, two sizes, standard, for 1⅝" O. D., and large, for 1⅞" O. D. tubing.

N-7, Seventy-two (72) degree Corner Coupling, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-8, One hundred and twenty (120) degree Corner Coupling, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-9, Straight Side Partition Coupling (90 degrees), two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-10, Angle Side Partition Coupling, the sides being disposed at an angle of 144 degrees and the partition being set at an angle of 72 degrees to the sides, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-11, Three Piece Center Partition Coupling, each set at an angle of one hundred and twenty (120) degrees to the other, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-12, Four-Piece Center Partition Coupling, each set at an angle of 90 degrees (right angles) to the other, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-13, Five-Piece Center Partition Coupling, each set at an angle of seventy-two (72) degrees to the other, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-14, Tee-Coupling for large posts or columns, eighteen sizes. The smaller or Tee ends are made for 1⅝" and 1⅞" O. D. tubing. The larger or head ends are made for 2⅜, 2⅞ or 3, 3½, 4, 4½, 5, 5½ or 5⅝, 6 and 6⅝" O. D. posts or columns. **In ordering give sizes of all connections.**

N-15, Cross Coupling for large posts or columns, eighteen sizes, smaller ends for 1⅝" or 1⅞" O. D. tubing, center for 2⅜, 2⅞ or 3, 3½, 4, 4½, 5, 5½ or 5⅝, 6 and 6⅝" O. D. posts or columns. **Give sizes of all connections.**

N-16, Large Floor Flange for 1⅞" O. D. tubing; will fit 1⅝" O. D. tubing by bushing.

N-17, Wall or Flat Post Flange for 1⅞" O. D. tubing. Will fit 1⅝" O. D. tubing by bushing.

N-18, Wall or Flat Post Flange, two sizes, for 1$\frac{5}{16}$" and 1⅝" O. D. tubing.

N-19, Grip Clamp, made in eight sizes, the O. D. of the head tubing being given first and of the Tees, second. 1⅞ x 1⅝; 1⅞ x 1$\frac{5}{16}$; 1⅞ x 1$\frac{1}{16}$; 1⅝ x 1⅝; 1⅝ x 1$\frac{5}{16}$; 1⅝ x 1$\frac{1}{16}$; 1$\frac{5}{16}$ x 1$\frac{1}{16}$, and 1$\frac{1}{16}$x1$\frac{1}{16}$" O. D. tubing. (For description of Grip Clamps, see page 139.)

N-20, Interlocking Stanchion Holder and Manger Spring Holder, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-21, Collar, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-22, Double or Center Pivot for Manger Hinges, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-23, Single or End Pivot for Manger Hinges, two sizes, for 1⅝" and 1⅞" O. D. tubing.

N-24, Pressed Steel Clip, for throat chains, stanchion side chains and "Hold Shut" for Gate Latch; three sizes, for 1$\frac{5}{16}$", 1⅝" and 1⅞" O. D. tubing.

N-25, Center Brace Rod Clamp for Manger Divisions, for 1$\frac{1}{16}$" O. D. tubing.

N-26, End Brace Rod Clamp for Manger Division, for 1$\frac{1}{16}$" O. D. tubing.

N-27, Right Angle Side Partition Coupling for large posts or columns with built-on clamp; sixteen sizes, small ends for 1⅝" and 1⅞" O. D. tubing. Center for 2⅞ or 3, 3½, 4, 4½, 5, 5½ or 5⅝, 6 and 6⅝" posts or columns. This is the same as N-15 with a built-on clamp added.

N-28, Right Angle Center Partition Coupling for large posts or columns, with built-on clamps. Sizes the same as N-27. **Give sizes of all the parts in ordering.**

N-29, Acute Angle Cross Coupling for large posts or columns, with built-on clamps set at an acute angle to the Tee-Heads and to themselves. Sizes the same as N-27. Built-on clamps may be placed on the other side of coupling if desired, making as many as 6 small clamps, 2 integral and 4 built-on. If necessary, the angles of built-on clamps may be varied to some extent. **In ordering, give sizes of all the parts and the angles of built-on clamps.**

N-30, (Overlooked in Plate 15). Right Angle Corner Coupling for large posts or columns with built-on clamps for 1⅝ or 1⅞" O. D. tubing. It is like N-14 with one built-on clamp. Same size as N-27.

Louden Reinforced Building Columns

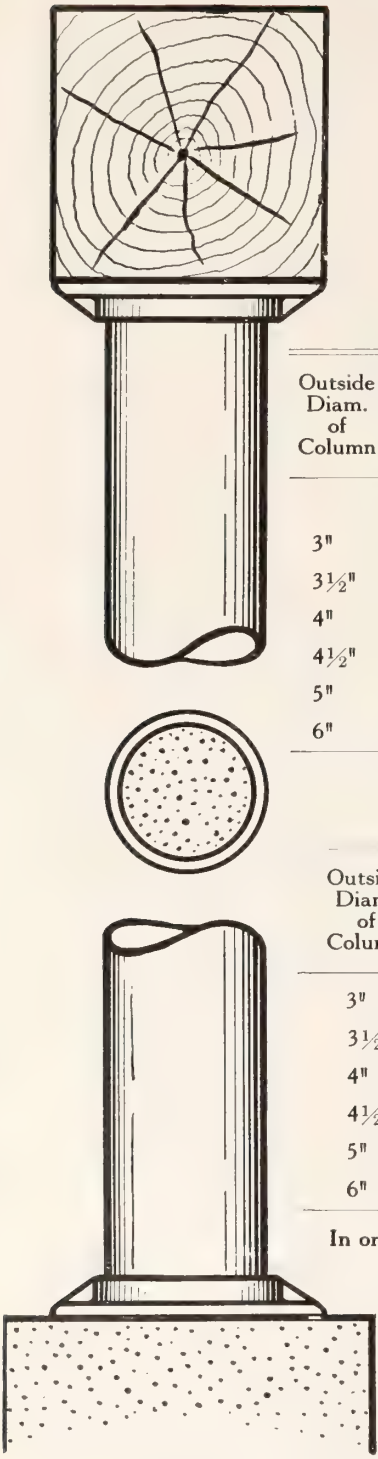


Fig. 1185

The Louden Reinforced Building Columns are made of an outer shell or tube of steel compactly filled with concrete. They are the strongest and most durable building columns made. They are especially adapted for supports in farm buildings. Each column is fitted with a suitable metal Cap and Base. Gas pipe columns can be furnished, if desired, at the same prices—See second table.

Carrying Capacity in Tons—Reinforced Columns

Outside Diam. of Column	Weight in lbs. of Plain Col. Shaft per ft.	Length of Column in Feet										
		6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
		Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons
3"	9.64	6	6	5	.....	.....	.....	.....	.....	.....	.....	.....
3½"	13.09	9	9	8	8	7	.....	.....	.....	.....	.....	.....
4"	17.02	13	13	12	12	11	10	.....	.....	.....	.....	.....
4½"	21.05	14	14	13	13	12	11	10	.....	.....	.....	.....
5"	25.90	20	20	19	19	18	18	17	17	16	.....	.....
6"	36.82	28	28	27	27	26	26	25	24	23	23	22

Carrying Capacity in Tons—Gas Pipe Columns

Outside Diam. of Column	Length of Column in Feet											
	6'	7'	8'	9'	10'	11'	12'	13'	14'	16'	18'	20'
3"	9.20	8.57	7.94	7.32	.....	.....	.....	.....	.....	.....	.....	.....
3½"	12.94	12.27	11.60	10.94	10.27	9.61	.....	.....	.....	.....	.....	.....
4"	16.18	15.48	14.78	14.09	13.39	12.69	11.99	11.30	.....	.....	.....	.....
4½"	19.73	19.00	18.27	17.54	16.81	16.07	15.34	14.61	13.88	.....	.....	.....
5"	23.45	22.69	21.93	21.17	20.40	19.64	18.88	18.11	17.35	15.83	.....	.....
6"	27.90	27.10	26.30	25.51	24.71	23.91	23.12	22.32	21.52	19.93	18.34	.....

In ordering be sure to give outside diameters.

The Measurements of Tubing

There are two kinds of measurements used for tubing—the *inside* diameter, or pipe measurement, and the *outside* diameter (O. D.), or structural measurement. The following table gives the O. D. measurement of the different sizes of pipes from ¾-inch to 6-inch:

¾ inch pipe	1 1/16 inches, O. D.	3 inch pipe	3½ inches, O. D.
1 inch pipe	1 5/16 inches, O. D.	3½ inch pipe	4 inches, O. D.
1¼ inch pipe	1⅝ inches, O. D.	4 inch pipe	4½ inches, O. D.
1½ inch pipe	1⅞ inches, O. D.	4½ inch pipe	5 inches, O. D.
2 inch pipe	2⅜ inches, O. D.	5 inch pipe	5⅝ inches, O. D.
2½ inch pipe	2⅞ inches, O. D.	6 inch pipe	6⅝ inches, O. D.

HORSE STABLE FITTINGS and BARN PLANS

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Salt Rolls 119

Horse Stable Equipment

You have noticed how a horse sticks his nose down to the bottom of the manger, roots around awhile, and then pulls out a hatful or so of hay onto the floor with his nose.

You have seen him when he was eating grain, push a handful or two over the side of the box in his earnest attempt to get a big mouthful.

You have noticed your horses do these things; but did you ever try to imagine the total expense in this waste?

Conservative estimates place this waste at 20% of the feed given the animals. Figured on this basis the average horse wastes something like $15 or $20 each year.

Louden Horse Stable Equipment was designed to prevent, and does prevent, this waste. It also gives to the barn a clean, up-to-date appearance, is more sanitary, and keeps the horses in better condition at all times.

The cost of the equipment is more than saved in a very few months. The purchase is good business judgment, whether the buyer is farmer or town man. For years the city big barn owners—stables where from 50 to 500 horses are fed—have realized the necessity of this feed-saving, money-making equipment, and now up-to-date, economical farmers everywhere are putting it in.

It costs no more to install modern, time-saving, sanitary steel and iron equipment than it does to build of lumber.

For over a half century we have been making a study of barn needs and have the most complete line ever offered.

Louden Horse Barn Equipment, Louden Dairy Barn Equipment, Louden Hay Unloading Tools, and Louden Litter and Feed Carriers are known for their high quality in every country. It is our aim to make the name Louden stand for all that is best in barn equipment.

THE LOUDEN MACHINERY COMPANY of CANADA, Ltd.

Open and Box Stall Fittings

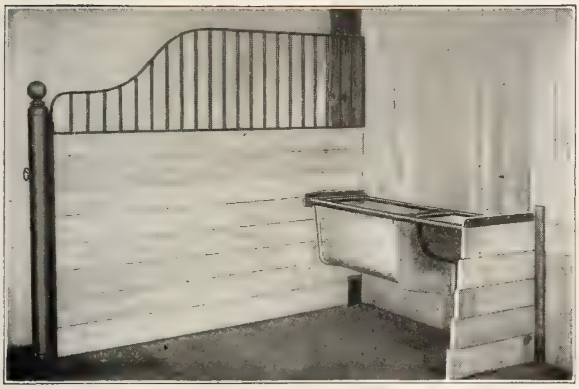


Fig. L 900

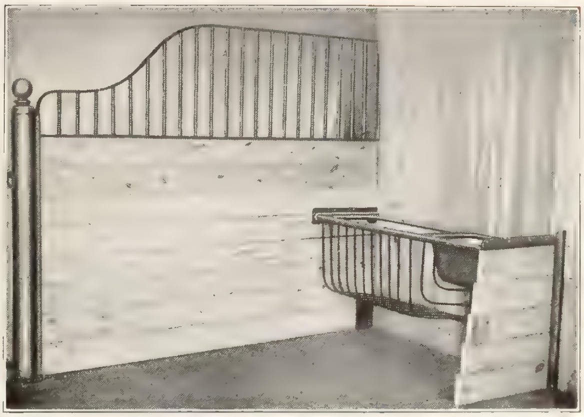


Fig. L 901

A well equipped horse barn is a source of satisfaction to the owner, and a profitable investment.

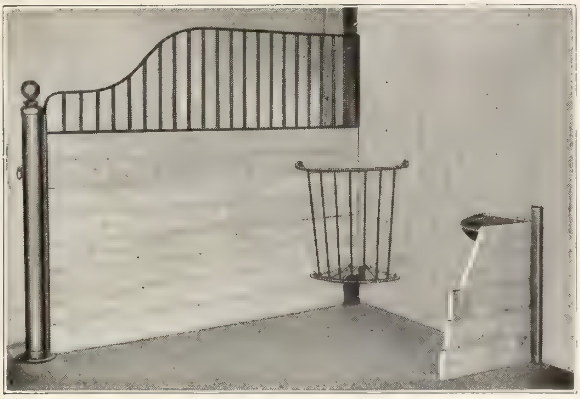


Fig. L 902

These sanitary fittings eliminate waste of feed and prevent destruction of the woodwork of the stalls.

Correct design, high grade materials and best workmanship are combined in the production of these fittings with most satisfactory results in neatness, strength and durability.

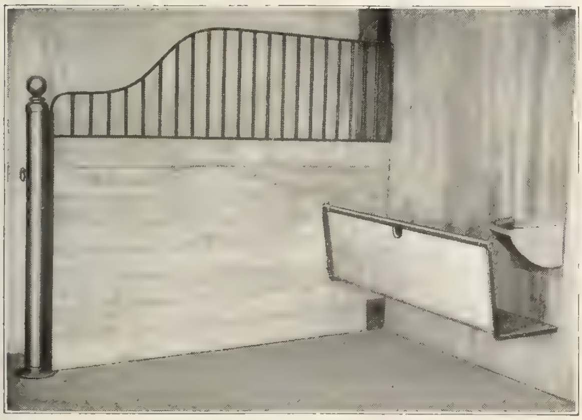


Fig. L 903

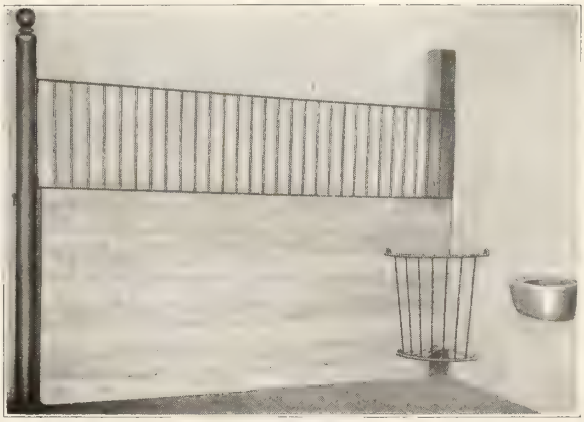


Fig. L 904

Louden Combined Mangers and Hay Racks

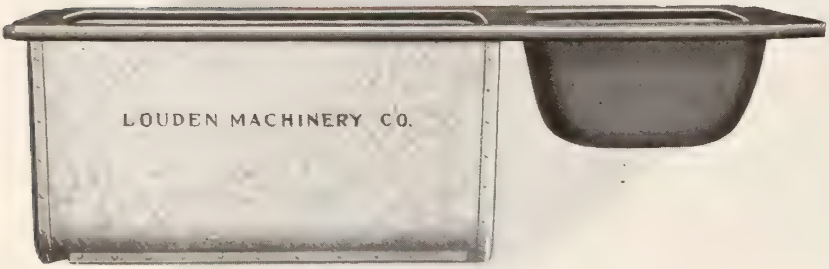

LOUDEN MACHINERY CO.

Fig. L-905

Louden Combined Mangers and Hay Racks as illustrated on this page, are the choice of those who want the best; unexcelled in material, workmanship, and finish; easily installed and an economy in any horse stable.

The Manger Tops and the Feed Bowls are made of heavy cast iron, as are the End Flanges used for attaching the mangers to the stalls.

The Hay Rack shown in **Fig. L-905,** is made of heavy galvanized steel, closely riveted to heavy angles which, in turn, are securely fastened to the top plate. Hay Rack, as shown in **Fig. L-906,** is made of ½ in. iron rods, spaced 3½ in. O. C. These rods are riveted to a heavy iron frame which, in turn, is secured to the top plate.

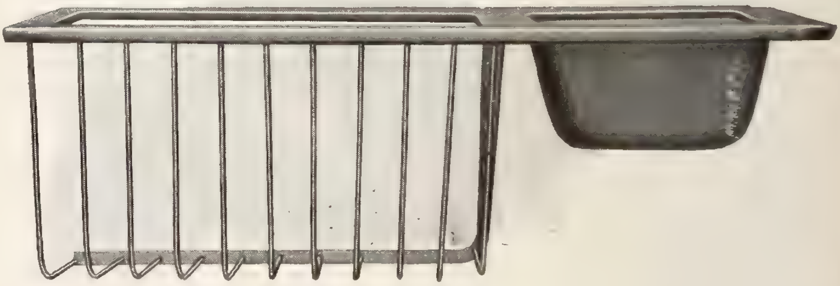


Fig. L-906

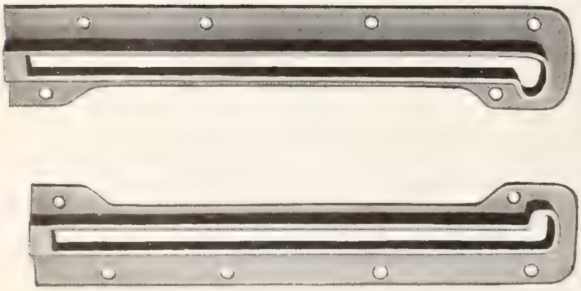


Fig. L-918

Specifications Mangers L-905 and L-906: Length, over all, 5 ft. 0 in.; width, 21 in.

Feed Bowls: Length, 17 in. width, 14 in., depth, 11 in.

Hay Rack: Length, 2 ft. 8 in., width, 15½ in., depth, 21 in. Weight, including Flanges, 160 lbs.

Louden Iron Hay Racks

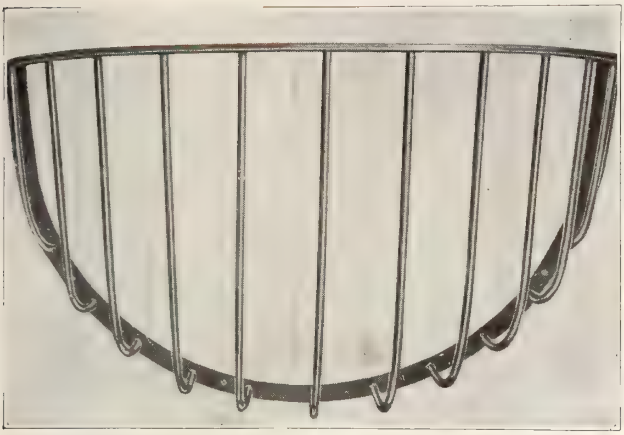


Fig. L-908

Wrought Iron Center Hay Rack

Size. Width, 2 ft. 9 in.; Height, 2 ft., projects from wall 1 ft. 6 in.

Construction. Frame of 1½ in. x ¼ in. Iron upright bars of ½ in. Round, spaced 4½ in. on centers.

Weight. 37 lbs.

This is an extra strong Hay Rack, suitable for use in double stalls. It can be conveniently filled from the stall or from the loft.

Wrought Iron Corner Hay Rack

Size. Height, 2 ft. 10 in., projects from corner 2 ft.

Construction. Frame of 1½ in. x ¼ in. Iron upright bars of ½ in. Round, spaced 4½ in. on centers.

Weight. 26 lbs.

This neat and serviceable rack and an iron feed box provide at a reasonable price, a most satisfactory outfit for an open stall. A rack of this kind effects a saving in hay, as an animal can take from it just the amount it will eat.

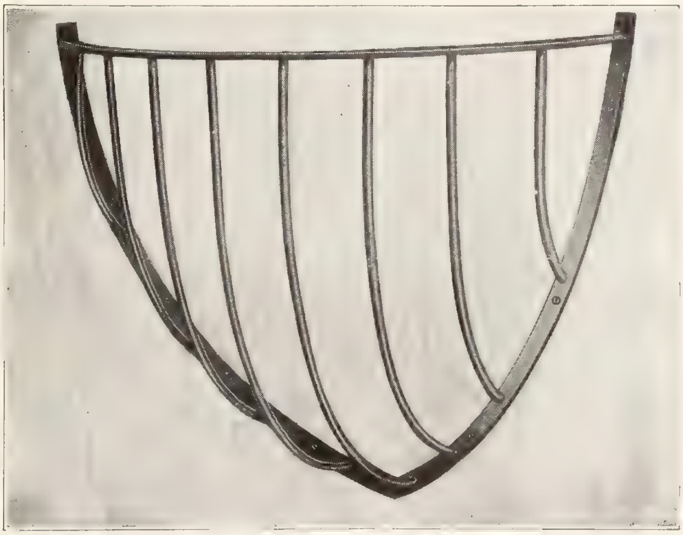


Fig. L-909

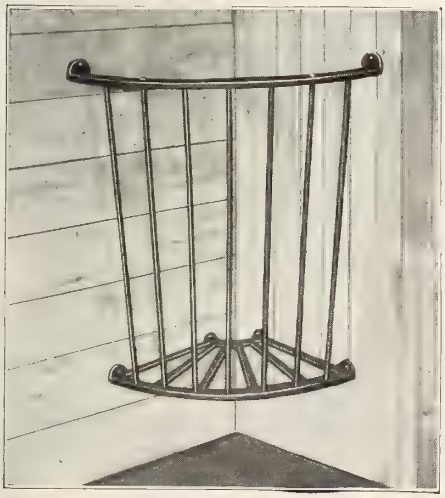


Fig. L-910

Low Down Corner Hay Rack

Size. Height, 2 ft. 7 in., projects at top 22 in.; at bottom, 18 in.

Construction. Top Bar and bottom section malleable iron; upright bars of ½ in. Round, spaced center to center, at top, 4½ in., at bottom, 3½ in.

Weight. 19 lbs.

For feeding hay in a box stall this corner rack is unexcelled. It is strong and substantial and adds much to the good appearance of a stable.

Louden Galvanized Steel Mangers

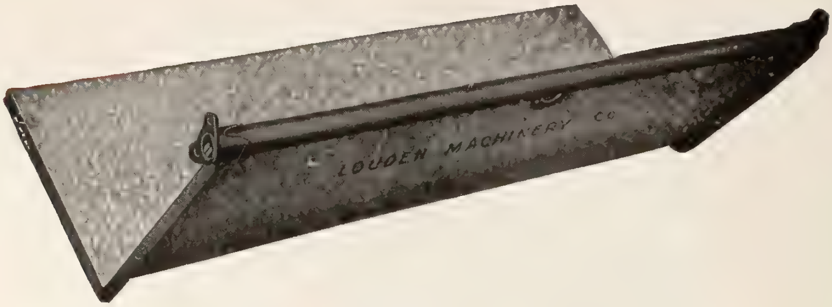


Fig. L-907

The manger shown above is a most serviceable one. It can be used in box stalls or in open stalls with or without an iron feed box as shown on this page.

CONSTRUCTION: 16 gauge galvanized steel, 1⅝ in. tubular steel front bar; 1 in. angles, back and ends. Center reinforced with band of steel.

Standard size; width at top, 21 in.; at bottom, 17 in. Length; 5 ft. 0 in. Special Lengths furnished.

Weight per ft., 10 lbs.

Louden Iron Feed Boxes

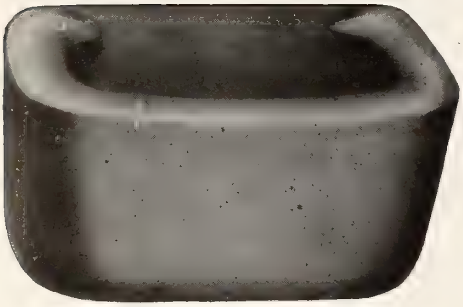


Fig. L-912

Oblong Feed Box

SIZE: Length, 16 in.; Width, 10½ in.; Depth, 9 in.

CONSTRUCTION: Cast Iron with round edge food guard.

FINISH: Battleship grey enamel paint.

WEIGHT: 34 lbs.

Corner Feed Box

SIZE: Length on Sides, 15½ in.; Depth, 8½ in.

CONSTRUCTION: Cast Iron, with round edge food guard.

FINISH: Battleship grey enamel paint.

WEIGHT: 30 lbs.

Our Iron Feed Boxes are sanitary and practically indestructible. They are neat in appearance and easily installed. Note the wide food guard which prevents the grain from being nosed out by the horse.

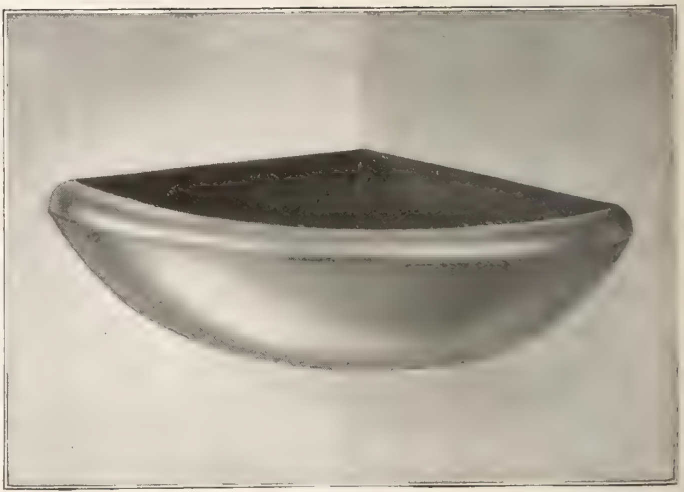


Fig. L-911

Louden Horse Stall Posts

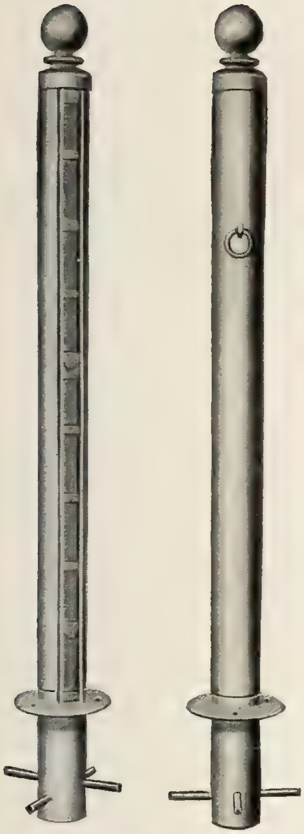


Fig. L-913

Specifications

Open Stall Post, Fig. L-913

Construction. Heavy tubular steel, 4½ in. outside diameter fitted with 4 ft. 6 in. of rabbet for 2 in. dressed plank; Malleable floor flange, and ball top.

Length, over all, 7 ft. 3 in. Length, above flange, 5 ft. 9 in.
Weight, 85 lbs.
Special finish of Fenway Blue.

This Steel Stall Post is an excellent and economical thing. It cannot be hacked away by the kicks of the horse, nor can it be broken off like a cast iron or wooden post. Where used the making of the stall partitions is simplified. The rabbet attached to the post making it easy to place the planks, or to remove them when necessary. Neat and strong, lasts a life time, and helps the appearance of any stable.

Box Stall Post, Fig. L-914

Construction. Heavy tubular steel, 4½ in. outside diameter, fitted with flange, ball top and rabbet for 2 in. dressed plank.

Length, over all, 8 ft. 9 in. Length, above flange, 7 ft. 3 in.
Weight, 105 lbs.

Where necessary, we can supply ceiling posts 4½ in. outside diameter, any length, fitted with rabbet for 2 in. dressed plank, and top and bottom plates.

Special finish of Fenway Blue.

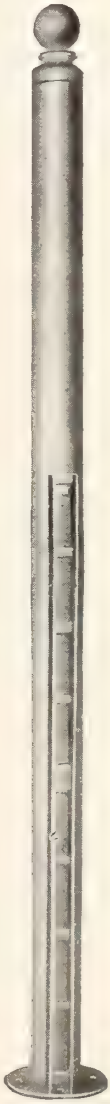


Fig. L-914

Louden Harness Hooks

Fig. L-923, illustrates these two popular sized Malleable harness hooks.

One projects 11 in. and the other one, 5 in.
Weight, 11 in. Hook, 2 lbs; 5 in. Hook, ¾ lbs.

Heavy Iron Harness Hooks are so much better than ordinary spikes or wooden pegs. With the latter the harness frequently falls to the floor to be trampled upon. This is not the case with these neat, strong and shapely hooks. When hung, the harness cannot slip off.

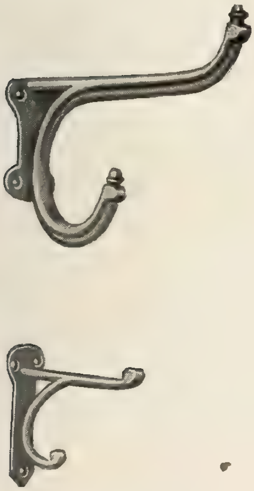


Fig. L-923

Louden Horse Stall Guards

Louden Wrought Iron Stall Guards are popular because of their simplicity, strength and finish. The frames are constructed of 1½ in. x ¼ in. flat, and 1½ in. x ¼ in. half oval steel, riveted together. The rods are ⅝ in. O. D. tubular steel, spaced 4 in. on centers. Guards furnished any length.

Height, 2 ft. 2 in. Finish, Fenway Blue. Weight per ft. 9 lbs.

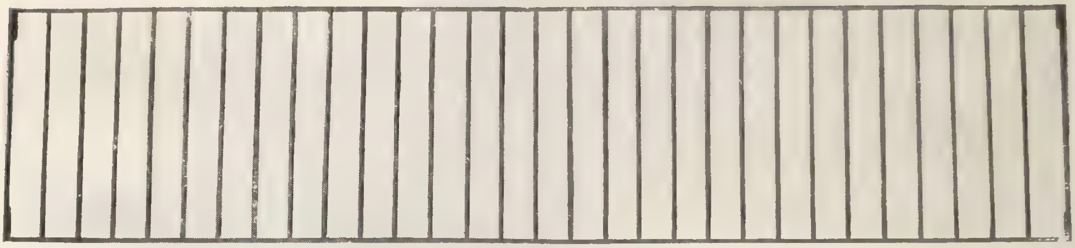


Fig. L-917

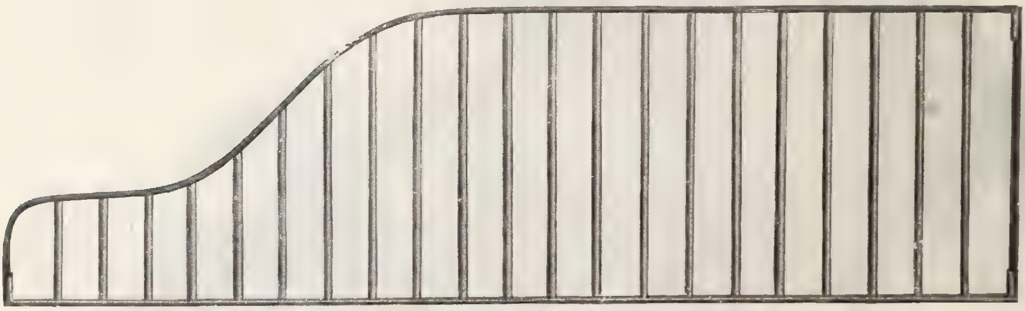


Fig. L-916

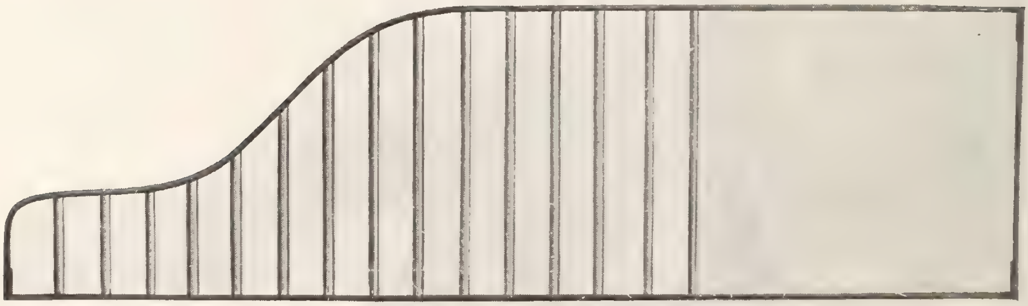
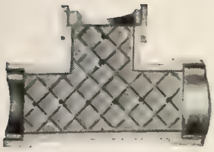
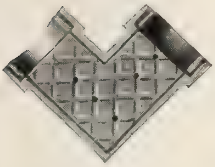


Fig. L-915

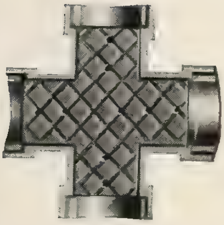
Louden Iron Gutter, Cover and Cesspool



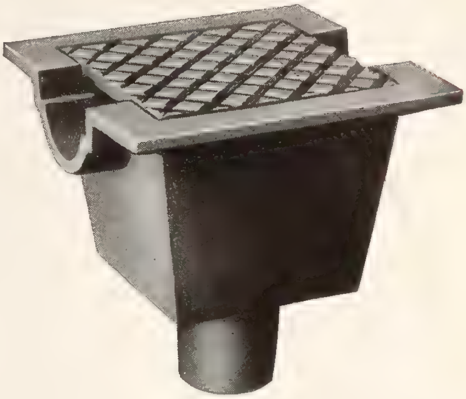
L-919. T Angle Connection for 4¼ in. gutters only. Weight, 15 lbs.



L-920. Right or Left Angle Connection for 4¼ in. gutters only. Weight, 13 lbs.



L-921. Double Right Angle Connection for 4¼ in. gutters only. Weight, 17 lbs.



L-926. Cesspool with Bell Trap, open both ends, to connect with 4¼ in. gutter. Size, 11 in. square, outlet, 3½ in. outside. Weight, 46 lbs.

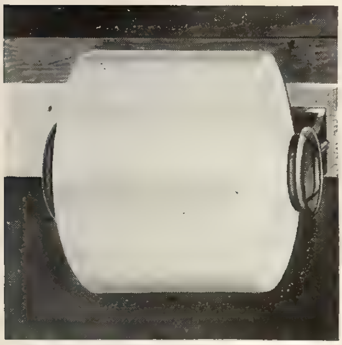
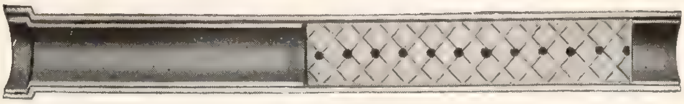


Fig. 1061



L-922. Iron Stable Gutter and Cover. Width, 4¼ in. Gutter in lengths of 3 ft. Cover in lengths of 1 ft. 5 in. Weight, Gutter per ft., 5 lbs. Cover, per ft., 7 lbs.

Louden Salt Rolls and Holders

Salt when they want it, and as they want it, is a good thing for your horses. The Louden Salt Roll and Holder as illustrated, Fig. 1061, provides the most convenient, economical and altogether the best way of salting horses and cattle.

These Rolls of Diamond Crystal Salt are 99% pure. They disintegrate slowly, and on account of their extreme hardness, they do not easily chip or break.

Specifications

Size of Salt Roll:—Length, 4 in.; Diameter, 5 in.; Weight, 5 lbs.

Holders are fitted with grip clamps for use on tubular steel stalls, or with connections for attaching by means of bolts or screws to vertical or horizontal timbers of wood stalls.

Barn of J. F. Descoteaux
Ste. Monique de Nicolet, P.Q.

Ste. Monique de Nicolet, March 10th, 1918.

Dear Sirs:

Pardon me for the delay in replying to yours, as I have been indisposed, and was obliged to put aside all correspondence.

I am more than pleased to know that the Louden Co. will publish the picture of my building in their new catalogue, and in return I have no hesitation in stating that I am always well pleased, and in proof of this you must have received many enquiries, as I have given your address to people who come and visit my barn and stables. Your hay tools have done such good work that people are really amazed when they see us unload our hay with such rapidity and ease. Your steel stalls and columns are just as solid as the day they were put in, and as you know I have already had them installed several years.

Wishing you continued success,

I am, yours very truly

J. F. Descoteaux.

Note.—Mr. Descoteaux has our Senior Cable Carriers, and Giant Grapple Forks, 2 Litter Carriers, Track, Bird Proof Barn Door Hangers, 811 Stalls and Louden Water Bowls, also columns.

Ste. Monique de Nicolet, 10 Mars, 1918.

Mr. W. J. Goyeau.

Monsieur:

Pardonnez moi si j'ai retardé à vous reponder j'ai été un peu indisposé lorsque j'ai reçu votre lettre et c'est ce qui m' a fait retardé à vous repondre. Je suis des plus flatté que votre compagnie ait l'obligeance de publier dans son catalogue le photographie de ma bâtisse. En retour je n'hésite pas à vous dire que je suis toujours des plus satisfait, et comme preuve de ceci vous avez du voir beaucoup de gens à qui j'ai donné votre adresse. Nos fourches et la trac cable en acier emerveille les gens qui nous voient déchargé le foin. Les poteaux en fer et tout le rest si tient encore aussi droit que neuf. Pour souhaitant toujours du succès.

Je suis votre tout devoué,

J. F. Descoteaux

GET PLANS BEFORE YOU BUILD

Guess work in building a barn is not only slow, wasteful and expensive, but it results in a barn that is a constant source of dissatisfaction as long as it stands.

You expect that barn you are planning to build to serve you the rest of your life—then why not get it right? The few days or weeks you spend getting ready for a right start will be regained by the time the building is completed, and the few dollars you spend for plans will be saved many times over during its construction.

But most important of all, you will have a barn that exactly meets your needs—convenient, labor-saving, properly lighted and ventilated, free from waste space—in fact, **the ideal barn for you,** and one you will take pleasure and pride in.

No other organization of architects is so well equipped to give you expert advisory service and practical barn plans as the Architectural Department of The Louden Machinery Company.

Unlike most architectural concerns, its services are limited strictly to one line of work. Agricultural Architecture. Every man on the staff is a **Farm Building Specialist.** As a result they are more competent to advise you on your farm building problems than any organization of general practicing architects.

Our staff of skilled architects and builders is supplemented by an auxiliary of 75 practical field men who know barns from basement to ridgepole.

There is probably a field man in your territory. Write us about your building plans and we will have him see you, if possible, and talk the matter over with you. There's no expense—no obligation. We're glad to confer with you about the matter that's nearest our hearts—the building of better barns—and we sincerely believe we can benefit you.

Why Build From Plans?

Complete plans will protect you against waste of material due to guessing and working in the dark as to measurements.

They will protect you against waste of time, due to delay necessary in figuring our details of construction, while the work is in progress.

They will protect you against the misunderstandings which so often arise between owner and builder. Even the most reliable builder may misinterpret your desires, and go wrong, when no complete plans are followed.

They will help you to adjust your loss in case of fire.

Louden Plans

will effect a valuable saving in material and labor. They will expedite your building operations. They will give you the advantage of the knowledge of experts, gained through many years of study and experience. They will correctly convey your wants to your builder. They will help him to give you efficient service.

Every plan we execute is of the highest order. Our great organization enables us to give you the very best service at a very moderate price.

Guelph, March 1, 1918

Louden Machinery Co. of Can., Ltd.,
Guelph, Ont.

Gentlemen:—

Having our new barn now completed I thought I would write you a line to let you know how well we are pleased with the interior equipment.

The barn is a 50′x80′ Preston Steel Truss, equipped with Louden Hay Carrier, Louden Litter Carrier, Louden Steel Stalls with cross chain ties, Louden Bull Pen, Louden Horse Stall Guards and Acorn Water Bowls.

We think we have one of the most up-to-date barns in Wellington County but not one of the most expensive. Intending builders are welcome, at all times, to see it.

Yours truly,
J. Telford & Sons.

The Advantages of a Well Planned Barn

The primary feature of a well planned dairy barn is its provision for cow comfort. Practical tests have proved conclusively that the cow's physical comfort is a big factor in her milk yield.

The well planned dairy barn has a ventilating system that **ventilates.** The number and areas of vent-flues necessary are scientifically determined. The window area is carefully calculated, according to the number of animals to be housed. Floors, mangers, and gutters are designed for durability and cleanliness. The cows are provided with light, airy stalls that give them utmost freedom and comfort.

The well planned barn is convenient for the workmen, as well as comfortable for the cows and other livestock, an extremely important feature where help is scarce and high-priced.

It is so designed and equipped that no labor is lost. The silo is located where it is convenient for feeding, as well as for filling. The feed bins are located where they can be reached with the fewest number of steps. The manure pit is located, if possible, so that it is not necessary to push a load uphill. The barn is equipped with labor-saving appliances that increase the profits derived from it, and transform barn drudgery to pleasant labor.

Louden barn plans meet every requirement for the comfort of the stock and the convenience of the workman. Economy in construction is carefully sought, so far as it does not interfere with strength, durability, or sanitation.

Write us about your building plans. We can give you valuable suggestions.

The Individual Plan

When you build a barn you build for a definite purpose and that purpose should be kept constantly in mind. Whether you build for horses or cows, for dairying or feeding, for the storage of feed or farm implements, or for a combination of these, the correct amount of space should be allowed for each purpose, the total of which will determine the size of the building.

This rule seems simple enough, but becomes complicated when economy of construction is taken into consideration. A barn 40 feet square, with 1600 square feet of floor space, may meet your requirements satisfactorily. It may be found, however, that a barn 32x50, having the same floor area, will meet your requirements equally well, and will cost less on account of requiring lighter construction for a 32-foot span, than for a 40-foot span.

In such matters as this our trained architects and builders, thoroughly versed in the requirements of the modern barn, can be of real service to you.

Our Architects Make Every Plan an Individual Study

In working out a plan for **you,** they will make a study of your special requirements and shape the plan to meet your needs. They will take into consideration climatic conditions in your territory, current local prices of building materials, transportation problems, and labor conditions. If you so desire an architect will be sent to confer with you and look over the building site, in order to make more intelligent suggestions in regard to drainage, disposal of manure, and general arrangement of buildings.

We are prepared to work out complete plans for you, from the ground up, or we will take **your own ideas** and work them out in detail for your builder. In either case the services will be rendered free or at a very moderate cost.

University Farm, St. Paul, Minn., Dec. 29, 1915.

The Louden Machinery Company,
St. Paul, Minn.

Gentlemen:

Am pleased to acknowledge receipt of the book of Barn Plans. You are certainly doing a real service in assisting farmers to construct and equip for true economy.

Yours truly,
R. M. Washburn,
Asso. Prof. of Dairy Husbandry

Our Complete Architectural Service

It is the purpose of The Louden Architectural Department not only to prepare practical barn plans, but to assist barn owners in the solution of any problems that may arise in regard to farm buildings or equipment.

They will give you expert advice on lighting, ventilating, heating, concrete work, strength of materials, fire protection, drainage, disposal of manure, and upon all problems of sanitation or hygiene.

We employ a landscape architect whose work is principally upon large estates, so arranging the farm buildings that they will harmonize with one another and with their surroundings.

Whether your farm is large or small, the buildings should be arranged with due regard to landscape architecture and a general pleasing effect. Your farm buildings can display individuality and good architectural design, and at the same time be practical, modern and convenient, separately and collectively.

Do not hesitate to consult us on any question of Farm Mechanics.

What is the capacity of my silo?

What size silo will I need for my herd?

How much concrete will I need to build a water tank?

What size post will be necessary to support an overhead grain bin?

What size pulley will be required to run a cream-separator or a churn at proper speed?

What is a good formula for whitewash?

We can help you answer many such puzzling questions, and will be glad to do so without charge and without obligating you in any way.

Our Charges

The Louden Architectural Department is in reality a Service Department of The Louden Machinery Company. Consequently a large part of the valuable service it renders is free.

We make no charge for:

Advisory service covering farm building or any branch of Agricultural Engineering.

Preliminary sketches and suggestions, including suggestive floor plans and complete explanation of each feature.

A personal visit from any Louden field representative who may be within your territory.

For any of the following services we make a moderate charge, based on the amount of time and effort involved.

A special trip by one of our architects to confer with you on building problems or land-scape architecture.

Complete building plans and specifications, including all information required for the completion of the building.

Bills of Material, on which prices are quoted separately.

Albion, Idaho, Sept. 1, 1916.

The Louden Machinery Company,
Fairfield, Ia.

Gentlemen:

We wish to thank you for the helpful suggestions and plans you so kindly furnished in the building of our horse barn, and we honestly believe we have one of the best barns in the state of Idaho, and one that would be a credit to any community or farm.

Yours very truly.
Ervine Dewey & Sons.
By G. M. Dewey.

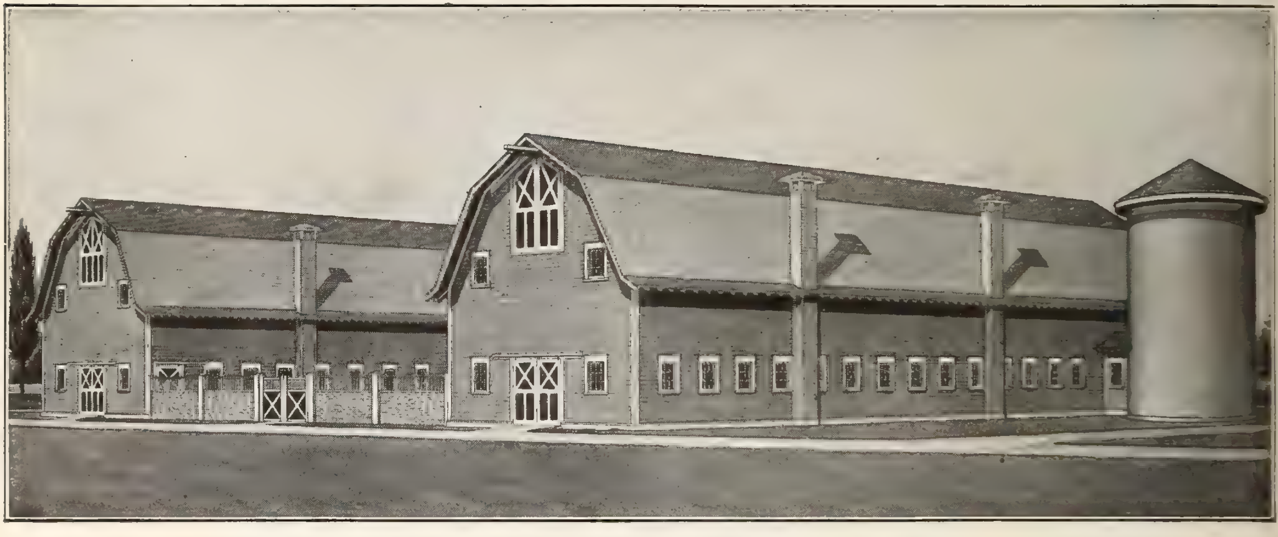
"Louden Barn Plans"

Louden Barn Plans is a 112-page book of practical barn plans and building information, compiled by the Louden Architectural Department. It contains the best of the building ideas gathered in fifty years of specializing along this line by William Louden and his able assistants.

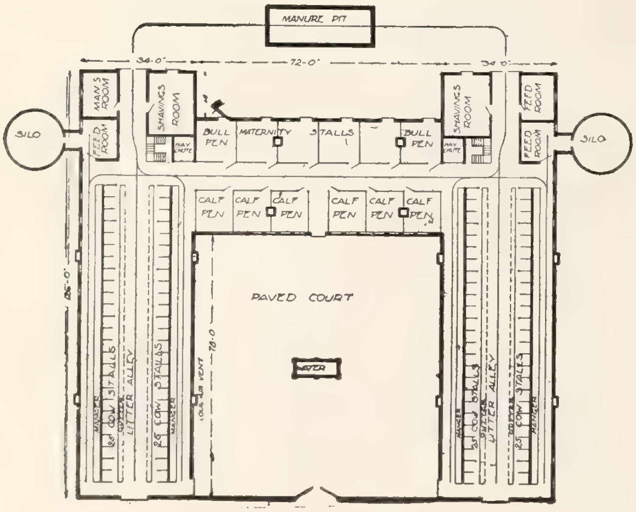
It shows seventy-two representative designs for dairy and general purpose barns, and other farm buildings, with full description and estimated cost of each. It treats in a clear understandable way the subjects of grading, drainage, concrete work, framing, lighting, ventilating, strength of materials—every problem in fact that confronts the barn builder.

If you expect to build or remodel a barn, now or later, you need this book. We'll gladly mail you a copy on request.

Don't wait till you're ready to build—get it now!



Design 1840—For Dairy Barn



Description

This barn is 126 ft. wide by 140 ft. long.

The foundation wall extends 18 inches above the ground and the frame sidewalls are 16 ft. high.

The lower story is 9½ ft. high, the hay mow is 22 ft. high from floor to hay carrier-track, the vertical sidewalls in the hay mow are 6 ft. high, and the ridge of roof is 36 ft. above the ground.

The foundation wall is of concrete construction, and the entire floor of the lower story is of concrete construction.

Capacity of mow, 315 tons loose hay.

The barn above the foundation is of plank-frame construction and has a clear hay mow without posts.

The cost is estimated to be $9800.00.

Price of Complete working plans and specifications for Design 1840 .... $25.00

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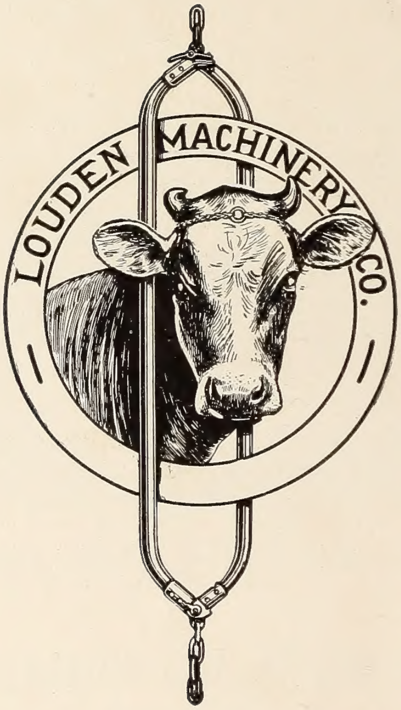
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